**Administrative Use Only**
Agreement Date: _____

**PROFESSIONAL SERVICES AGREEMENT BETWEEN**
**OHM ADVISORS**
**AND THE CITY OF ANN ARBOR**
**FOR PITTSFIELD VILLAGE IMPROVEMENTS PROJECT**

This agreement ("Agreement") is between the City of Ann Arbor, a Michigan municipal corporation, 301 E. Huron St. Ann Arbor, Michigan 48104 ("City"), and OHM ADVISORS, a(n) Michigan corporation, 355 South Zeeb Road, Suite A, Ann Arbor, Michigan 48103 ("Contractor"). City and Contractor agree as follows:

## I. DEFINITIONS

Administering Service Area/Unit means **Public Services / Engineering**.

Contract Administrator means **Nicholas Hutchinson**, acting personally or through any assistants authorized by the Administrator/Manager of the Administering Service Area/Unit.

Deliverables means all Plans, Specifications, Reports, Recommendations, and other materials developed for and delivered to City by Contractor under this Agreement.

Project means Pittsfield Village Improvements project RFP 23-32.

## II. DURATION

Contractor shall commence performance on October 2, 2023 ("Commencement Date"). This Agreement shall remain in effect until satisfactory completion of the Services specified below unless terminated as provided for in Article XI. The terms and conditions of this Agreement shall apply to the earlier of the Effective Date or Commencement Date.

## III. SERVICES

A. The Contractor agrees to provide professional consulting engineering services ("Services") in connection with the Project as described in Exhibit A. The City retains the right to make changes to the quantities of service within the general scope of the Agreement at any time by a written order. If the changes add to or deduct from the extent of the services, the compensation shall be adjusted accordingly. All such changes shall be executed under the conditions of the original Agreement.

B. Quality of Services under this Agreement shall be of the level of quality performed by persons regularly rendering this type of service. Determination of acceptable quality shall be made solely by the Contract Administrator.

C. The Contractor shall perform its Services for the Project in compliance with all statutory, regulatory, and contractual requirements now or hereafter in effect as may be applicable to the rights and obligations set forth in the Agreement. The Contractor shall also comply with and be subject to the City of Ann Arbor policies applicable to independent contractors.

D. The Contractor may rely upon the accuracy of reports and surveys provided to it by the City (if any) except when defects should have been apparent to a reasonably competent professional or when it has actual notice of any defects in the reports and surveys.

## IV. INDEPENDENT CONTRACTOR

The Parties agree that at all times and for all purposes under the terms of this Agreement each Party's relationship to any other Party shall be that of an independent contractor. Each Party will be solely responsible for the acts of its own employees, agents, and servants. No liability, right, or benefit arising out of any employer/employee relationship, either express or implied, shall arise or accrue to any Party as a result of this Agreement.

Contractor does not have any authority to execute any contract or agreement on behalf of the City, and is not granted any authority to assume or create any obligation or liability on the City's behalf, or to bind the City in any way.

## V. COMPENSATION OF CONTRACTOR

A. The Contractor shall be paid in the manner set forth in Exhibit B. Payment shall be made monthly, unless another payment term is specified in Exhibit B, following receipt of invoices submitted by the Contractor, and approved by the Contract Administrator.

B. The Contractor will be compensated for Services performed in addition to the Services described in Article III, only when the scope of and compensation for those additional Services have received prior written approval of the Contract Administrator.

C. The Contractor shall keep complete records of work performed (e.g. tasks performed, hours allocated, etc.) so that the City may verify invoices submitted by the Contractor. Such records shall be made available to the City upon request and submitted in summary form with each invoice.

## VI. INSURANCE/INDEMNIFICATION

A. The Contractor shall procure and maintain from the Effective Date or Commencement Date of this Agreement (whichever is earlier) through the conclusion of this Agreement, such insurance policies, including those set forth in Exhibit C, as will protect itself and the City from all claims for bodily injuries, death or property damage that may arise under this Agreement; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of work under this Agreement, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the policies and endorsements required by Exhibit C. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

B. Any insurance provider of Contractor shall be authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.

C. To the fullest extent permitted by law, Contractor shall indemnify, defend, and hold the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses, including attorney's fees, resulting or alleged to result, from any acts or omissions by Contractor or its employees and agents occurring in the performance of or breach in this Agreement, except to the extent that any suit, claim, judgment or expense are finally judicially determined to have resulted from the City's negligence or willful misconduct or its failure to comply with any of its material obligations set forth in this Agreement.

## VII. COMPLIANCE REQUIREMENTS

A. Nondiscrimination. The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of the Ann Arbor City Code and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

B. Living Wage. If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Agreement a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Agreement are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

## VIII. WARRANTIES BY THE CONTRACTOR

A. The Contractor warrants that the quality of its Services under this Agreement shall conform to the level of quality performed by persons regularly rendering this type of service.

B. The Contractor warrants that it has all the skills, experience, and professional licenses (if applicable) necessary to perform the Services pursuant to this Agreement.

C. The Contractor warrants that it has available, or will engage, at its own expense, sufficient trained employees to provide the Services pursuant to this Agreement.

D. The Contractor warrants that it has no personal or financial interest in the Project other than the fee it is to receive under this Agreement. The Contractor further certifies that it shall not acquire any such interest, direct or indirect, which would conflict in any manner with the performance of the Services it is to provide pursuant to this Agreement. Further Contractor agrees and certifies that it does not and will not employ or engage any person with a personal or financial interest in this Agreement.

E. The Contractor warrants that it is not, and shall not become overdue or in default to the City for any contract, debt, or any other obligation to the City including real and personal property taxes. Further Contractor agrees that the City shall have the right to set off any such debt against compensation awarded for Services under this Agreement.

F. The Contractor warrants that its proposal for services was made in good faith, it arrived at the costs of its proposal independently, without consultation, communication or agreement, for the purpose of restricting completion as to any matter relating to such fees with any competitor for these Services; and no attempt has been made or shall be made by the Contractor to induce any other person or firm to submit or not to submit a proposal for the purpose of restricting competition.

G. The person signing this Agreement on behalf of Contractor represents and warrants that she/he has express authority to sign this Agreement for Contractor and agrees to hold the City harmless for any costs or consequences of the absence of actual authority to sign.

## IX. OBLIGATIONS OF THE CITY

A. The City agrees to give the Contractor access to the Project area and other City-owned properties as required to perform the necessary Services under this Agreement.

B. The City shall notify the Contractor of any defects in the Services of which the Contract Administrator has actual notice.

## X. ASSIGNMENT

A. The Contractor shall not subcontract or assign any portion of any right or obligation under this Agreement without prior written consent from the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under the Agreement unless specifically released from the requirement, in writing, by the City.

B. The Contractor shall retain the right to pledge payment(s) due and payable under this Agreement to third parties.

## XI. TERMINATION OF AGREEMENT

A. If either party is in breach of this Agreement for a period of fifteen (15) days following receipt of notice from the non-breaching party with respect to a breach, the non-breaching party may pursue any remedies available to it against the breaching party under applicable law, including but not limited to, the right to terminate this Agreement without further notice. The waiver of any breach by any party to this Agreement shall not waive any subsequent breach by any party.

B. The City may terminate this Agreement, on at least thirty (30) days advance notice, for any reason, including convenience, without incurring any penalty, expense or liability to Contractor, except the obligation to pay for Services actually performed under the Agreement before the termination date.

C. Contractor acknowledges that, if this Agreement extends for several fiscal years, continuation of this Agreement is subject to appropriation of funds for this Project. If funds to enable the City to effect continued payment under this Agreement are not appropriated or otherwise made available, the City shall have the right to terminate this Agreement without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to Contractor. The Contract Administrator shall give Contractor written notice of such non-appropriation within thirty (30) days after it receives

notice of such non-appropriation.

D. The provisions of Articles VI and VIII shall survive the expiration or earlier termination of this Agreement for any reason. The expiration or termination of this Agreement, for any reason, shall not release either party from any obligation or liability to the other party, including any payment obligation that has already accrued and Contractor's obligation to deliver all Deliverables due as of the date of termination of the Agreement.

## XII. REMEDIES

A. This Agreement does not, and is not intended to, impair, divest, delegate or contravene any constitutional, statutory and/or other legal right, privilege, power, obligation, duty or immunity of the Parties.

B. All rights and remedies provided in this Agreement are cumulative and not exclusive, and the exercise by either party of any right or remedy does not preclude the exercise of any other rights or remedies that may now or subsequently be available at law, in equity, by statute, in any agreement between the parties or otherwise.

C. Absent a written waiver, no act, failure, or delay by a Party to pursue or enforce any rights or remedies under this Agreement shall constitute a waiver of those rights with regard to any existing or subsequent breach of this Agreement. No waiver of any term, condition, or provision of this Agreement, whether by conduct or otherwise, in one or more instances, shall be deemed or construed as a continuing waiver of any term, condition, or provision of this Agreement. No waiver by either Party shall subsequently affect its right to require strict performance of this Agreement.

## XIII. NOTICE

All notices and submissions required under this Agreement shall be delivered to the respective party in the manner described herein to the address stated below or such other address as either party may designate by prior written notice to the other. Notices given under this Agreement shall be in writing and shall be personally delivered, sent by next day express delivery service, certified mail, or first class U.S. mail postage prepaid, and addressed to the person listed below. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; (2) the next business day when notice is sent next day express delivery service or personal delivery; or (3) three days after mailing first class or certified U.S. mail.

If Notice is sent to the CONTRACTOR, it shall be addressed and sent to:

OHM ADVISORS
ATTN: George Tsakoff
355 South Zeeb Road, Suite A
Ann Arbor , Michigan 48103

If Notice is sent to the CITY, it shall be addressed and sent to:

City of Ann Arbor
ATTN: Nicholas Hutchinson
301 E. Huron St.
Ann Arbor, Michigan 48104

With a copy to: The City of Ann Arbor
ATTN: Office of the City Attorney
301 East Huron Street, 3rd Floor
Ann Arbor, Michigan 48104

## XIV. CHOICE OF LAW AND FORUM

This Agreement will be governed and controlled in all respects by the laws of the State of Michigan, including interpretation, enforceability, validity and construction, excepting the principles of conflicts of law. The parties submit to the jurisdiction and venue of the Circuit Court for Washtenaw County, State of Michigan, or, if original jurisdiction can be established, the United States District Court for the Eastern District of Michigan, Southern Division, with respect to any action arising, directly or indirectly, out of this Agreement or the performance or breach of this Agreement. The parties stipulate that the venues referenced in this Agreement are convenient and waive any claim of non-convenience.

## XV. OWNERSHIP OF DOCUMENTS

Upon completion or termination of this Agreement, all documents (i.e., Deliverables) prepared by or obtained by the Contractor as provided under the terms of this Agreement shall be delivered to and become the property of the City. Original basic survey notes, sketches, charts, drawings, partially completed drawings, computations, quantities and other data shall remain inthe possession of the Contractor as instruments of service unless specifically incorporated in a deliverable, but shall be made available, upon request, to the City without restriction or limitation on their use. The City acknowledges that the documents are prepared only for the Project. Prior to completion of the contracted Services the City shall have a recognized proprietary interest in the work product of the Contractor.

## XVI. CONFLICTS OF INTEREST OR REPRESENTATION

Contractor certifies it has no financial interest in the Services to be provided under this Agreement other than the compensation specified herein. Contractor further certifies that it presently has no personal or financial interest, and shall not acquire any such interest, direct or indirect, which would conflict in any manner with its performance of the Services under this Agreement.

Contractor agrees to advise the City if Contractor has been or is retained to handle any matter in which its representation is adverse to the City. The City's prospective consent to the Contractor's representation of a client in matters adverse to the City, as identified above, will not apply in any instance where, as the result of Contractor's representation, the Contractor has obtained

sensitive, proprietary or otherwise confidential information of a non-public nature that, if known to another client of the Contractor, could be used in any such other matter by the other client to the material disadvantage of the City. Each matter will be reviewed on a case by case basis.

## XVII. SEVERABILITY OF PROVISIONS

Whenever possible, each provision of this Agreement will be interpreted in a manner as to be effective and valid under applicable law. However, if any provision of this Agreement or the application of any provision to any party or circumstance will be prohibited by or invalid under applicable law, that provision will be ineffective to the extent of the prohibition or invalidity without invalidating the remainder of the provisions of this Agreement or the application of the provision to other parties and circumstances.

## XVIII. EXTENT OF AGREEMENT

This Agreement, together Exhibits A, B, and C, constitutes the entire understanding between the City and the Contractor with respect to the subject matter of the Agreement and it supersedes, unless otherwise incorporated by reference herein, all prior representations, negotiations, agreements or understandings whether written or oral. Neither party has relied on any prior representations, of any kind or nature, in entering into this Agreement. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Agreement, regardless of the other party's failure to object to such form. This Agreement shall be binding on and shall inure to the benefit of the parties to this Agreement and their permitted successors and permitted assigns and nothing in this Agreement, express or implied, is intended to or shall confer on any other person or entity any legal or equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Agreement. This Agreement may only be altered, amended or modified by written amendment signed by the Contractor and the City. This Agreement may be executed in counterparts, each of which shall be deemed an original, but all of which together shall be deemed to be one and the same agreement.

## XIX. ELECTRONIC TRANSACTION

The parties agree that signatures on this Agreement may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Agreement. This Agreement may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

## XX. EFFECTIVE DATE

This Agreement will become effective when all parties have signed it. The Effective Date of this Agreement will be the date this Agreement is signed by the last party to sign it.

**[REMAINDER OF PAGE LEFT BLANK; SIGNATURE PAGE FOLLOWS]**

**FOR_____**

Contractor Name

By_____

Name:_____

Title:_____

Date: _____

**FOR THE CITY OF ANN ARBOR**

By _____
Christopher Taylor, Mayor

By _____
Jacqueline Beaudry, City Clerk

Date: _____

**Approved as to substance**

_____
Brian Steglitz, Public Services Area Administrator

_____
Milton Dohoney Jr., City Administrator

**Approved as to form and content**

_____
Atleen Kaur, City Attorney

# EXHIBIT A
# SCOPE OF SERVICES

**(Insert/Attach Scope of Work & Deliverables Schedule)**

**BACKGROUND**

The City of Ann Arbor is seeking professional consulting services to design, permit, and prepare bid construction documents for the ***Pittsfield Village Improvements Project***. The ***Pittsfield Village Improvements Project*** includes a new roadway section in some areas, sanitary sewer and stormwater system upgrades, stormwater quantity and quality improvements, water main(s) replacement, replacement of curb and gutter, and the construction of new sidewalk and/or the filling in of sidewalk gaps within the project limits. Key elements of the project include:

Water Main (UT-WS-20-09)

- Upsizing of approximately 9,100 LF of aging asbestos cement water main where applicable (see map in Attachment A). A small portion of water mains within Pittsfield Village were replaced in 2007.

Sanitary Sewer (UT-SN-20-01; UT-SN-18-07)

- Upsizing of approximately 1,700 LF of existing 8" to 12" in Norwood to improve wet weather capacity.
- Rehabilitation of aging sanitary sewers and manholes as identified in the 2023 Pittsfield Village Sanitary Sewer and Stormwater Evaluation Survey (Att. A).

Street Construction and/or Resurfacing (TR-SC-24-10)

- Address pavement condition; determine whether roads need resurfacing or reconstruction
- Consider filling sidewalk gap on Whitewood Street
- Implement All Ages and Abilities (A3) bike corridor Edgewood to Pittsfield to Washtenaw

Stormwater Improvements (UT-ST-22-02; UT-ST-18-06)

- Rehabilitation of aging storm sewers and structures as identified in the 2023 Pittsfield Village Sanitary Sewer and Stormwater Evaluation Survey (Att. A).
- Evaluate stormwater improvements to improve street/surface flooding in Parkwood/Pittsfield area as identified in the 2015 Stormwater Hydraulic Model Calibration and Analysis Project.
- Incorporate recently constructed (2015) stormwater detention at 3500 Washtenaw into evaluation of stormwater management opportunities.
- Evaluate green infrastructure opportunities where possible to reduce surface flooding to the maximum extent practicable. Green Streets Policy will be required in areas with new road construction.
- Installation of curb drains for private sump pump discharge.

Our current CIP shows the construction of this project in 2 phases, however we expect consultant to evaluate the extend of work, it's impact on community and propose a phasing plan. The Consultant shall staff and schedule their work in order to meet the required submission deadlines.

## INFORMATION AVAILABLE

- Record drawings of the existing streets, stormwater, water main and sanitary sewers
- InfoSWMM (EPA SWMM 5.0) sanitary and stormwater hydraulic model (will be available to the selected consultant upon execution of a Non-Disclosure Agreement)
- 2023 – WCWRC Swift Run Watershed Study (on-going)
- 2023 - Pittsfield Village Sanitary Sewer and Stormwater Evaluation Survey (SSES)
    - Includes a condition assessment and recommended repair plan of all sanitary and stormwater pipes and manholes within Pittsfield Village
- 2023 - Pittsfield Village Curb Drain Study
    - Provides planning level curb drain layout and sizing for needed curb drain extensions within the project area
- 2022 – June 25-26 2021 Storm Event Analysis https://www.a2gov.org/junestorm
- 2017 – Sanitary Sewer Improvements Preliminary Engineering (SSIPE) – Norwood Sanitary Improvements recommendations https://www.a2gov.org/departments/systems-planning/Documents/2018%20SSIPE%20Final%20Report.pdf
- 2015 – Stormwater Hydraulic Model Calibration and Analysis Project (SWMM) – Parkwood/Pittsfield Stormwater Improvements recommendations https://www.a2gov.org/departments/systems-planning/planning-areas/water-resources/Documents/A2_SWM_Report_20150601_with_Appendices.pdf
- CIP Project Data Sheets https://www.a2gov.org/cip
- Historical soil boring logs
- Historical water main break and water quality complaint records
- Available City GIS Layers:
    - 1-foot contours (LiDAR Based)
    - Wetlands
    - Woodlands
    - Aerial Photography
    - City Utility Systems
    - Parcels
    - Soil Survey
    - Historical Soil Boring Records (from 2006)
    - Impervious and Pervious Areas

## SCOPE OF WORK

The Consultant shall perform the necessary design work and prepare construction plans and specifications suitable for bidding purposes for all elements of the project which include road improvements, sanitary sewer and stormwater system upgrades, stormwater quantity and quality improvements, installation of new curb drain, water main(s) replacement, replacement of curb and gutter, and the construction of new sidewalk and/or the filling in of sidewalk gaps within the project limits. The Consultant is expected to work with City Staff to develop the full scope for the road improvements, which could include complete reconstruction of the subgrade, replacement of curb & gutter, and adjustments to the vertical alignment. With the reconstruction of any existing streets, the project must provide stormwater management improvements as outlined by WCWRC and City stormwater rules and design standards, including the City Green Streets Policy.

In general, the following items will need to be addressed by the consulting firm, as part of the requested services to be provided on this project:

1) Prepare a Stormwater Improvements Plan including reviewing the existing studies and previous consultant's investigation to alleviate surface flooding, when possible, within the project area. The Plan should include design of stormwater improvements such as but not limited to bioretention areas with native plantings and grasses (rain gardens), hydrodynamic separators (pre-cast, swirl chamber type systems), oversized conveyance/detention pipes, and storm structures with internal overflow weirs or other applicable best management practices.

    a) Develop rehabilitation plan and construction bid documents for any needed improvements to the existing stormwater system within the project area. The city recently completed a sanitary sewer and stormwater evaluation survey (SESC) which should be the basis for this work. The consultant shall review and validate the recommendations from this previous work. Supplemental inspection data for any structures will be required to be performed by the consultant. City will provide supplemental CCTV data on any needed storm sewers.

    b) Implement recommendations from the ***2023 Curb Drain Plan*** for addressing lack of available stormwater system for sump pump discharge. Funding for any work (design and construction) related to curb drain improvements may come from the Developer's Offset Mitigation Program. Consultant shall track and prepare cost estimates separately for these improvements.

    c) Evaluate and recommend green and/or gray infrastructure opportunities to alleviate surface flooding issues as reported by residents.

    d) Evaluate road drainage and determine if expansion of existing stormwater system is needed within the project area.

    e) Validate stormwater improvements to improve street/surface flooding in Parkwood/Pittsfield area as identified in the ***2015 Stormwater Hydraulic Model Calibration and Analysis Project***

a. Incorporate recently constructed (2015) stormwater detention at 3500 Washtenaw into evaluation of stormwater management opportunities.

f) Consultant shall coordinate with Swift Run Watershed Study (currently underway) to align with recommendations that may come out of this study.

g) Review and utilize information from the ***June 25-26 2021 Storm Event Analysis*** to inform the overall Stormwater Improvements Plan.

h) Perform hydraulic analyses and prepare written report for the proposed stormwater improvements. Consultant shall update the city's hydraulic model (InfoSWMM) reflecting the final stormwater design.

i) The proposed stormwater improvements shall provide both water quality improvements during smaller more frequent storm events and, peak flow attenuation during larger storm design events.

2) Prepare a Sanitary Sewer Improvements Plan including reviewing the existing studies and the recent SESC report. The Plan should include design of sanitary sewer improvements to address the sewer issues found in the studies.

   a) Prepare all necessary construction bid documents for the ***Norwood (Bellwood to East of Whitewood) Sanitary Upsizing (UT-SN-20-01)*** project. This includes upsizing approximately 1,700 LF of existing 8" to 12" sanitary sewer in Norwood to improve wet weather capacity as identified in the ***2018 Sanitary Sewer Improvements Preliminary*** project.

   b) Develop rehabilitation plan and construction bid documents for any needed improvements to the existing sanitary sewer system within the project area. The city recently completed a SESC analysis which should be the basis for this work. The consultant shall review and validate the recommendations from this previous work. Supplemental inspection data for any manholes will be required to be performed by the consultant. City will provide supplemental CCTV data on any needed sanitary sewers. Maintenance concerns caused by flat pipe slopes/poor manhole channel slopes have been raised by staff in the past. Consultant shall carefully review these items and include any improvements in the rehabilitation plan.

   c) Funding for any work (design and construction) related to sanitary wet weather improvements may come from the Developer's Offset Mitigation Program. Consultant shall track and prepare cost estimates separately for any work related to wet weather capacity improvements. Examples of these wet weather improvements would be rehabilitation to eliminate inflow and infiltration or pipe upsizing (UT-SN-20-01).

3) Prepare a Water Main Improvements Plan for the project area. Areas of needed water main replacement are shown in Attachment A.

   a) Replace and upsize as needed aging existing water mains which are

Asbestos Cement (AC).

b) Pittsfield Village is currently serviced with water through 3 master meters. The city has been installing individual water meters within buildings as the opportunity rises with the goal of ultimately eliminating the need for the master meters. Consultant shall consider this with the design of the new water mains.

c) Replace galvanized service leads (city side) as needed. Eligible service lead replacements on the homeowner's side will be coordinated prior to construction.

4) Prepare a Road Improvements Plan for the project area.
   a) As part of the City's pre-design investigations, it was discovered that the existing road cross-sections in some areas are inadequate and may require reconstruction.
   b) Consultant to address pavement condition; determine whether roads need resurfacing or reconstruction and prepare plans for necessary improvements

5) Prepare a Pedestrian/Mobility Improvements Plan for the project area.

   a) Investigate existing sidewalk along Whitewood Street and prepare plans to fill in any gaps.
   b) Implement All Ages and Abilities (A3) bike corridor Edgewood to Pittsfield to Washtenaw

6) Prepare complete, detailed, and accurate construction drawings and specifications in accordance with City/WCWRC or other appropriate design standards. The format of the drawings shall be completely compatible with the City's drawing preparation standards and layout(s). It is expected that all drawings will be provided in a compatible format without the need to reconfigure drawings for plotting or other purposes.

7) Preparation of plans and specifications for all public utilities, sidewalk and road construction plans shall be in compliance with the Public Services Area Standard Specifications.

8) Preparation of plans and specifications shall include preliminary reports, identification of alternatives, cost estimates, and contract documents. The consultants shall also secure all necessary permits from all approving agencies including but not limited to the EGLE and WCWRC.

9) Prepare phasing plan (it is expected that this project will be completed in two phases).

10) The Consultant shall coordinate their efforts with the City to ensure the timely and cost-effective submittal of the project deliverables. The Consultant's Project Manager shall provide oversight, review, and coordination of their project deliverables with that of the City's so that a seamless product is provided and all deadlines are met.

11) Obtain all required permits from outside agencies. This includes but not limited to the water and sanitary permits from EGLE.

12) The Consultant shall attend project progress meetings as needed to ensure that proper coordination of their work and that of the City's is taking place throughout the entire design process and provide meeting minutes and action items for these meetings. Also, the Consultant shall coordinate their efforts with any other needed agency(ies), various City service units, private utility companies, other formal and informal committees, and the public in general.

13) Perform topographical surveying tasks as necessary for the preparation of civil engineering construction plans. The desired surveying services will include but not be limited to the gathering of topographical survey data for the project area and providing digital submissions. It is understood that the final work product will be a complete survey that will contain all known site features and will be ready for use as a base drawing for final engineering plans for all three phases and potentially future phases.

a) Data collection:

i. Topographic data for 1" = 20' scale plans.

ii. Digital copies of all files used to generate the topography data (i.e. breaklines, points and control files).

iii. All Right-of-Way (ROW) lines and monumentation to be located and shown.

iv. Location of all planimetric features within ROW, and 10' outside of the ROW

v. Minimum of 1 on-site benchmark for every 600' of utility shall be shown and described (minimum of 2 per project).

vi. All (public and private) utilities shall be located (overhead and underground).

Overhead information shall include:
location and type of utility

Underground information shall include:
type of structure
location and type of utility
size of structure
measured casting elevation
measured invert(s) elevation of pipe/top of pipe elevation

vii. All trees within the project area, are to be located and include trunk diameter at breast height (DBH) and canopy diameter. There will be no minimum tree size limits within the ROW, however, outside of the ROW only trees 6" DBH or greater need be located along with trees whose canopy may impact the project area.

viii. Datum to be in the City's official vertical datum of NAVD88 and horizontal datum of NAD83 (Michigan State Plane coordinates, international feet).

ix. Sufficient ground elevations for digital terrain model (DTM) generation for 1' contours, including around curb radii and through intersections. Curb ramps should have all 4 corners of the "level landing" and 10 adjacent flags of the walk transition located.

x. Where there is the potential of utilities crossing the project area, obtain utility information outside the project limits (i.e. locate downstream/upstream sanitary manholes that tie into manholes within project area).

14) Establishment of all needed pay items and specifications for the proposed work. This will include unique pay items that properly detail all required work to be performed by the Contractor so that best management practices are followed in all areas of the proposed work. The City reserves the right of final determination regarding specific Items of Work and if Detailed Specifications will be required to the satisfactorily detail and describe the work.

15) Complete quantity take-offs and earthwork calculations of all items of work for which the Consultant is responsible (i.e. and "Engineer's Estimate"). This information shall be provided to the City in Excel spreadsheet format.

16) Preparation of written specifications meeting the requirements of the City, WCWRC and EGLE for all work which the Consultant has prepared plans.

17) Any other items that the Consultant feels are necessary so that when the design is 100% complete, all needed work is detailed on the drawings and fully described in the project specifications.

18) Develop and implement a communication strategy that meets the following objectives:

- Communicate complex issues in an easy-to-understand and relatable way
- Inform stakeholders and residents about the project's progress on the design and implementation process

City staff has already completed the Engagement Toolkit to assess the level of engagement needed for this project. Below are the City's communication expectations for this project. The consultant may also provide additional ideas in the proposal.

a. Kick-off meeting: Prior to any work on the above scope items, the consultant shall convene a communication's kick-off meeting to learn about the history of the project's engagement efforts, start developing appropriate messaging, and determine the appropriate timeline, format, and distribution methods to inform the relevant groups impacted by this project.

   a) Present project material: At a minimum the City expects the following:
      i. Use community input collected in earlier studies as a consideration for

developing improvements within the project area

ii. Develop regular public updates through a variety of channels

iii. Prepare for at least three presentations during the design and implementation process. If it is believed that this project will require more than three presentations, please include a cost per additional meeting estimate in the budget. The consultant will deliver presentation content at in-person meetings/events and prepare a single-page flier or infographic to be distributed in coordination with the in-person events. The presentation should include the following content:

1. The design and implementation processes
2. Design options and associated impacts on community members
3. A summary of community comments
4. How the design process incorporates community comments, when it doesn't (and why not), and the rationale behind the selected option
5. Community resources

b) Target audience: The residents most impacted by this project represent a mix of demographic groups, some of which are considered more vulnerable populations such as low-income households. Consider area demographics in selecting communication tools; this may include less reliance on virtual meetings as compared to leveraging existing community meetings/events to access a broader audience and translation of materials if deemed necessary. Consultant shall at a minimum work with the following pre-determined groups throughout the project:

i. A Working Group consisting of City of Ann Arbor staff, other public agencies, and the Consultant

ii. The residents, likely through the Pittsfield Condominium Association

iii. Presentations to various boards, commissions, and City Council on an as needed basis.

c) Consultants should work with the City's Communications Department and Community Engagement Specialist to consider all of the necessary channels to promote public informational sessions.

i. Consultant may utilize a third party communication vehicle at the discretion of the City. It is expected that the Consultant will provide the content for these channels and for the City to finalize and approve the final message.

d) Documentation: Document all outreach and engagement activities in a written, summary document that includes a FAQ.

19) The City may ask the Consultants to provide construction engineering services including construction staking and full-time inspection during construction for Phases. Consultants are asked to include these options tasks in their work plans and sealed fee proposals.

## SECTION III - MINIMUM INFORMATION REQUIRED

### PROPOSAL FORMAT

Offerors should organize Proposals into the following Sections:

A. Professional Qualifications
B. Past Involvement with Similar Projects
C. Proposed Work Plan
D. Fee Proposal (include in a separate sealed envelope clearly marked “Fee Proposal”)
E. Authorized Negotiator
F. Attachments

The following describes the elements that should be included in each of the proposal sections and the weighted point system that will be used for evaluation of the proposals.

A. Professional Qualifications – 20 points

1. State the full name and address of your organization and, if applicable, the branch office or other subsidiary element that will perform, or assist in performing, the work hereunder. Indicate whether it operates as an individual, partnership, or corporation. If as a corporation, include whether it is licensed to operate in the State of Michigan.

2. Include the name of executive and professional personnel by skill and qualification that will be employed in the work. Show where these personnel will be physically located during the time they are engaged in the work. Indicate which of these individuals you consider key to the successful completion of the project. Identify only individuals who will do the work on this project by name and title. Resumes and qualifications are required for all proposed project personnel, including all subcontractors. Qualifications and capabilities of any subcontractors must also be included.

3. State history of the firm, in terms of length of existence, types of services provided, etc. Identify the technical details that make the firm uniquely qualified for this work.

B. Past involvement with Similar Projects – 20 points

The written proposal must include a list of specific experience in the project area and indicate proven ability in implementing similar projects for the firm **and** the individuals to be involved in the project. A complete list of client references must be provided for similar projects recently completed. The list shall include the firm/agency name, address, telephone number, project title, and contact person.

C. Proposed Work Plan – 40 points

Provide a detailed and comprehensive description of how the offeror intends to provide the services requested in this RFP. This description shall include, but not be limited to: how the project(s) will be managed and scheduled, how and when data and materials will be delivered to the City, communication and coordination, the working relationship between the offeror and City staff, and the company's general philosophy in regards to providing the requested services.

Offerors shall be evaluated on the clarity, thoroughness, and content of their responses to the above items.

D. Fee Proposal - 20 points

Fee schedules shall be submitted in a separate, sealed, envelope as part of the proposal. Fee quotations are to include the names, title, hourly rates, overhead factors, and any other relevant details. The proposal should highlight key staff and positions that would likely be involved with projects. Offerors shall be capable of justifying the details of the fee proposal relative to personnel costs, overhead, how the overhead rate is derived, material and time.

E. Authorized Negotiator

Include the name, phone number, and e-mail address of persons(s) in your organization authorized to negotiate the agreement with the City

F. Attachments

Legal Status of Offeror, Conflict of Interest Form, Living Wage Compliance Form, and the Non-Discrimination Form should be returned with the proposal. These elements should be included as attachments to the proposal submission.

**PROPOSAL EVALUATION**

1. The selection committee will evaluate each proposal by the above-described criteria and point system (A through C) to select a short-list of firms for further consideration. The City reserves the right to reject any proposal that it determines to be unresponsive and deficient in any of the information requested for evaluation. A proposal with all the requested information does not guarantee the proposing firm to be a candidate for an interview. The committee may contact references to verify material submitted by the offerors.

2. The committee then will schedule interviews with the selected firms if necessary. The selected firms will be given the opportunity to discuss in more detail their qualifications, past experience, proposed work plan and fee proposal.

3. The interview must include the project team members expected to complete a majority of work on the project, but no more than six members total. The interview shall consist of a presentation of up to thirty minutes (or the length provided by the committee) by the offeror, including the person who will be the project manager on this contract, followed by approximately thirty minutes of questions and answers. Audiovisual aids may be used during the oral interviews. The committee may record the oral interviews.

4. The firms interviewed will then be re-evaluated by the above criteria (A through D), and adjustments to scoring will be made as appropriate. After evaluation of the proposals, further negotiation with the selected firm may be pursued leading to the award of a contract by City Council, if suitable proposals are received.

The City reserves the right to waive the interview process and evaluate the offerors based on their proposals and fee schedules alone and open fee schedules before or prior to interviews.

The City will determine whether the final scope of the project to be negotiated will be entirely as described in this RFP, a portion of the scope, or a revised scope.

Work to be done under this contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents.

Any proposal that does not conform fully to these instructions may be rejected.

**PREPARATION OF PROPOSALS**

Proposals should have no plastic bindings but will not be rejected as non-responsive for being bound. Staples or binder clips are acceptable. Proposals should be printed double sided on recycled paper. Proposals should not be more than 30 sheets (60 sides), not including required attachments and resumes.

Each person signing the proposal certifies that they are a person in the offeror's firm/organization responsible for the decisions regarding the fees being offered in the Proposal and has not and will not participate in any action contrary to the terms of this provision.

**ADDENDA**

If it becomes necessary to revise any part of the RFP, notice of the addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or the City of Ann Arbor web site www.A2gov.org for all parties to download.

Each offeror must acknowledge in its proposal all addenda it has received. The failure of an offeror to receive or acknowledge receipt of any addenda shall not relieve the offeror of the responsibility for complying with the terms thereof. The City will not be bound by oral responses to inquiries or written responses other than official written addenda.

## SECTION IV - ATTACHMENTS

Attachment A – Project Specific Attachments

Attachment B - Legal Status of Offeror

Attachment C – Non-Discrimination Ordinance Declaration of Compliance Form

Attachment D – Living Wage Declaration of Compliance Form

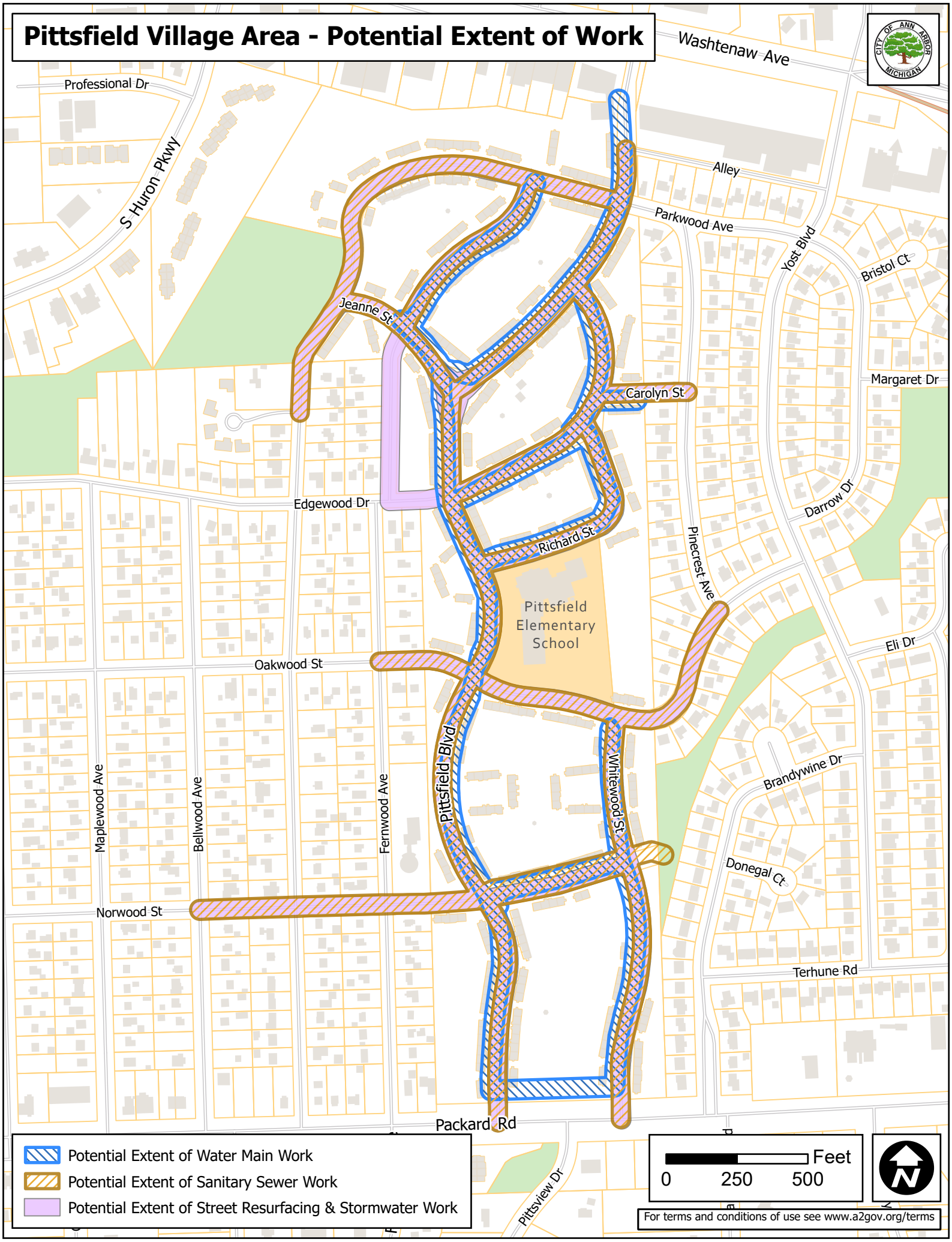
Attachment E – Vendor Conflict of Interest Disclosure Form

Attachment F – Non-Discrimination Ordinance Poster

Attachment G – Living Wage Ordinance Poster

**ATTACHMENT A**

# Pittsfield Village Area - Potential Extent of Work



# memorandum

**Date:** May 24, 2023

**To:** Troy Baughman, City of Ann Arbor

**cc:** George Tsakoff, OHM Advisors
Robert Czachorski, OHM Advisors

**From:** Mackenzie Johnson, OHM Advisors

**Re:** Pittsfield Village Sanitary Sewer and Stormwater Evaluation Survey

## Project Background

A large rain event occurred on the evening of June 25, 2021 into the early morning hours of June 26, 2021 resulting in numerous reports of flooding and basement backups in Washtenaw and Wayne Counties including portions of the City of Ann Arbor. The Pittsfield Village neighborhood and surrounding streets were the most impacted areas within the City of Ann Arbor.

In response to the flooding and basement backups, the City of Ann Arbor requested OHM Advisors to perform a sanitary sewer analysis to better understand the cause of the basement backups in this area and to provide recommendations on system improvements that would minimize the potential for similar occurrences in the future. One of the recommendations from that analysis was to perform a sanitary sewer evaluation survey to identify sources of inflow and infiltration into the sanitary sewer system such that they can be addressed. A significant amount of inflow and infiltration into the sanitary sewer system could contribute to sanitary sewer surcharges and basement backups during wet weather events.

Inflow and infiltration (I&I) is the occurrence of stormwater and groundwater entering into the sanitary sewer system. The amount of I&I into the sanitary sewer system typically increases during wet weather events. Sources of inflow and infiltration may include connected footing drains or roof drains, illicit connections from the stormwater system, and cracks and fractures in sanitary sewer pipes and manholes that allow groundwater and surface water to enter. I&I should be minimized to reduce the amount of stormwater that is conveyed by the sanitary sewer system and is unnecessarily treated at the wastewater treatment plant. This technical memorandum details the sanitary sewer and stormwater evaluation survey field investigations and findings and provides sanitary sewer and stormwater pipe and manhole rehabilitation recommendations.

## Sanitary Sewer Evaluation Survey Field Services

### Pipeline Inspections

Pipeline inspections are performed using closed-circuit televising (CCTV). This process involves pushing a small robotic device with a television camera through a pipeline to identify defects and sources of water entering the system. Both the sanitary sewer and storm sewer pipes within the Pittsfield Village neighborhood were inspected over the past several years, and the inspection reports and videos were provided by the City of Ann Arbor for review. The inspection reports utilize the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment Certification Program (PACP) coding system.

Under the PACP program, each pipe defect is assigned a grade based on its severity. Defects are graded on a 1 to 5 scale with Grade-5 being the most severe. Some common pipe defects include cracks, fractures, roots, broken pipe, and grease buildup among many others. Descriptions of the high-grade pipe defects found in the Pittsfield Village neighborhood are provided in Appendix D.

It should be noted that in some cases, there are more pipes with rehabilitation recommended than pipes with high-grade defects. There are a couple reasons for this anomaly. In several cases, some pipes have medium-grade defects that will likely soon become high-grade defects, so rehabilitation is recommended now. In other cases, pipes may contain the code “Miscellaneous Survey Abandon (MSA)” or “Miscellaneous General Observation (MGO)”. These codes are used when something unusual is found in the pipe that another code cannot describe. These codes do not trigger a defect grade; however, comments are documented and manual review of the inspection video is required. Sometimes, manual review reveals a problem with the pipe that requires repair or replacement, thus rehabilitation is recommended even if the pipe does not technically contain a high-grade defect. The same applies to manholes as well.

### Manhole Inspections

Manhole inspections were conducted on both sanitary and stormwater manholes throughout the Pittsfield Village neighborhood by televising the manhole using a camera on an extendable pole. Defects were then identified and coded based on NASSCO’s Manhole Assessment Certification Program (MACP). MACP employs the same defect coding and grading scale as PACP; however, some manhole defects differ from pipeline defects. Some common manhole defects include broken, offset, and loose frames, infiltration runners, deposits attached ragging, and missing brickwork among many others. Descriptions of the high-grade manhole defects found in the Pittsfield Village neighborhood are provided in Appendix D.

### Smoke Testing

Smoke testing involves blowing a non-toxic mist through the sanitary sewer system to identify locations where groundwater and stormwater can enter the system. Water can enter into the sanitary sewer system wherever the smoke exits. Some common smoke sources include leaks, uncapped or broken cleanouts, manhole bolt holes, and connected roof downspouts. The smoke sources identified in Pittsfield Village are shown in Appendix A.

## Sanitary Sewer and Stormwater Evaluation Survey Findings

### Sanitary Sewer Pipeline Inspections

The City has inspected 77 sanitary sewer pipes, totaling about 17,775 linear feet, within and around the Pittsfield Village neighborhood over the past several years. The data collected by the City was sent to OHM for review and analysis. Of the 77 pipes inspected, 30 pipes have at least one Grade-4 or Grade-5 defect (39%). These pipes contain a total of 132 Grade-4 defects and 16 Grade-5 defects.

The fracture multiple and fracture hinge defect codes as well as holes and broken pipes account for the majority of the Grade-4 defects. The surface damage missing wall defect code as well as holes and broken pipes with soil or voids visible account for the majority of the Grade-5 defects. Deformed pipe and surface damage missing wall defect codes are serious defects that may eventually lead to the pipe collapsing.

A complete list of defects and their associated pipes are shown in Table 1 below, and Figure 1 in Appendix B depicts the locations of these high-grade defects. As can be seen from the table, pipes 74-074681 and 74-62953 have many high-grade defects.

***Table 1: Pittsfield Village Sanitary Sewer High-Grade Defects***

| Pipe ID | Defect | Grade |
|---|---|---|
| 74-074681 | Hole Soil Visible (x2); Broken Soil Visible; Patch Repair Defective; Hole (x2); Fracture Hinge; Fracture Multiple (x6) | 5; 5; 4; 4 |
| 74-61539 | Fracture Multiple (x8); Infiltration Runner | 4; 4 |
| 74-61540 | Surface Damage Missing Wall; Hole | 5; 4 |
| 74-62060 | Deformed; Hole Void Visible; Fracture Multiple | 5; 5; 4 |
| 74-62061 | Fracture Multiple | 4 |
| 74-62062 | Hole Void Visible; Tap Break-In Intruding; Deposits Attached Encrustation | 5; 5; 4 |
| 74-62063 | Fracture Multiple (x2) | 4 |
| 74-62066 | Fracture Multiple | 4 |
| 74-62068 | Deposits Settled Fine (x2); Camera Underwater | 5; 4 |
| 74-62072 | Fracture Hinge; Broken | 4; 4 |
| 74-62075 | Fracture Hinge (x3); Fracture Multiple (x7) | 4; 4 |
| 74-62076 | Fracture Hinge | 4 |
| 74-62077 | Broken | 4 |
| 74-62107 | Deposits Settled Other | 4 |
| 74-62108 | Fracture Hinge; Fracture Multiple (x3) | 4; 4 |
| 74-62590 | Infiltration Runner | 4 |
| 74-62877 | Broken Soil Visible; Broken (x2); Hole | 5; 4; 4 |
| 74-62878 | Joint Offset Large; Hole (x2); Fracture Multiple (x4); Deposits Attached Encrustation | 5; 4; 4; 4 |
| 74-62879 | Root Ball Barrel; Hole; Broken (x2); Fracture Multiple (x5) | 5; 4; 4; 4 |
| 74-62881 | Fracture Multiple (x11) | 4 |
| 74-62927 | Crack Hinge | 4 |
| 74-62928 | Broken (x2) | 4 |
| 74-62930 | Fracture Hinge | 4 |
| 74-62931 | Miscellaneous Water Level Sag | 4 |
| 74-62933 | Fracture Hinge (x5); Fracture Multiple (x2) | 4; 4 |
| 74-62935 | Fracture Hinge | 4 |
| 74-62936 | Hole Void Visible; Miscellaneous Water Level Sag | 5; 4 |
| 74-62953 | Surface Damage Missing Wall; Hole Void Visible; Broken (x3); Fracture Hinge (x11); Fracture Multiple (x23); Miscellaneous Water Level Sag | 5; 5; 4; 4; 4; 4 |
| 74-62958 | Hole Soil Visible; Broken | 5; 4 |
| 74-62959 | Fracture Hinge (x2) | 4 |

**Stormwater Pipeline Inspections**

The City has inspected 73 stormwater pipes, totaling about 10,146 linear feet, within and around the Pittsfield Village neighborhood over the past several years. The data collected by the City was sent to OHM for review and analysis. Of the 73 pipes inspected, 32 pipes have at least one Grade-4 or Grade-5 defect (44%). These pipes contain a total of 67 Grade-4 defects and 9 Grade-5 defects.

The fracture multiple and fracture hinge defect codes as well as holes and broken pipes account for the majority of the Grade-4 defects. The surface damage missing wall defect code as well as holes and broken pipes with soil or voids visible account for the majority of the Grade-5 defects. Upon further review of the pipe inspections, there were also five (5) pipes that were deformed but did not have a “deformed pipe” defect coded. These deformed pipes are noted in Table 4 below. Deformed pipe and surface damage missing wall defect codes are serious defects that may eventually lead to the pipe collapsing.

A complete list of the stormwater pipe defects are shown in Table 4 below, and Figure 2 in Appendix B depicts the locations of these high-grade defects. As can be seen from the table, pipes 95-51509 and 95-51511 have many high-grade defects.

***Table 2: Pittsfield Village Stormwater High-Grade Pipeline Defects***

| Pipe ID | Defect | Grade |
|---|---|---|
| 95-065651 | Fracture Hinge (x2); Deformed | 4; 5 |
| 95-50780 | Line Right | 4 |
| 95-50781 | Fracture Multiple | 4 |
| 95-51253 | Hole | 4 |
| 95-51268 | Fracture Multiple | 4 |
| 95-51287 | Hole | 4 |
| 95-51474 | Fracture Multiple | 4 |
| 95-51476 | Fracture Multiple (x7) | 4 |
| 95-51481 | Hole (x3); Joint Offset Large; Line Left | 4; 4; 4 |
| 95-51482 | Deposits Settled Fine | 5 |
| 95-51502 | Fracture Hinge; Fracture Multiple (x2); Deformed | 4; 4; 5 |
| 95-51504 | Infiltration Runner | 4 |
| 95-51505 | Fracture Hinge | 4 |
| 95-51507 | Deposits Settled Other | 4 |
| 95-51509 | Hole Void Visible; Hole Soil Visible; Hole; Fracture Hinge; Fracture Multiple (x4); Broken | 5; 5; 4; 4; 4; 4 |
| 95-51511 | Hole Soil Visible; Broken Soil Visible; Broken Void Visible; Fracture Multiple | 5; 5; 5; 4 |
| 95-51517 | Crack Hinge; Broken; Deformed | 4; 4; 5 |
| 95-51541 | Fracture Multiple; Joint Offset Large | 4; 4 |
| 95-51542 | Fracture Hinge; Deformed | 4; 5 |
| 95-68257 | Fracture Hinge; Fracture Multiple (x2) | 4; 4 |
| 95-70490 | Line Right | 4 |
| 95-70572 | Broken | 4 |
| 95-70829 | Deposits Settled Fine | 4 |

| | | |
|---|---|---|
| 95-70830 | Surface Damage Missing Wall; Deposits Settled Fine | 5; 5 |
| 95-70838 | Fracture Multiple | 4 |
| 95-70870 | Fracture Multiple | 4 |
| 95-71213 | Fracture Multiple; Deformed | 4; 5 |
| 95-71231 | Deposits Settled Other | 5 |
| 95-71339 | Broken Soil Visible; Hole; Joint Offset Large (x2) | 5; 5; 4 |
| 95-71360 | Deposits Settled Gravel; Fracture Hinge; Broken (x2) | 5; 4; 4 |
| 95-71459 | Miscellaneous Camera Underwater | 4 |
| 95-71460 | Deposits Settled Fine | 5 |

**Sanitary Manhole Inspections**

OHM field crews inspected 56 sanitary manholes within the Pittsfield Village neighborhood. Of the 56 inspected manholes, 17 manholes were found to have at least one Grade-4 or Grade-5 defect (30%). A total of fourteen (14) Grade-4 defects and four (4) Grade-5 defects were identified. Manholes with fractures, missing mortar, and missing brickwork account for the majority of the Grade-4 defects. The Grade-5 defects consist of bench and channel collapses as well as surface damage. Table 3 below provides a complete list of the sanitary manholes with high grade defects, and Figure 1 in Appendix B shows the locations of the sanitary manholes with high-grade defects.

***Table 3: Pittsfield Village Sanitary Manhole High-Grade Defects***

| Manhole ID | Defect | Grade |
|---|---|---|
| 71-61796 | Deposits Attached Ragging | 4 |
| 71-61797 | Missing Mortar Large | 4 |
| 71-61798 | Missing Mortar Large | 4 |
| 71-61817 | Cracked Frame | 4 |
| 71-61827 | Fracture Multiple | 4 |
| 71-62269 | Missing Brickwork | 4 |
| 71-62670 | Channel Collapse | 5 |
| 71-62271 | Missing Mortar Large | 4 |
| 71-62275 | Fracture Multiple; Surface Damage Aggregate Missing | 4; 4 |
| 71-62276 | Fracture Multiple | 4 |
| 71-62277 | Surface Damage Reinforcement Visible | 5 |
| 71-62278 | Surface Damage Reinforcement Projecting | 5 |
| 71-62279 | Fracture Multiple | 4 |
| 71-62280 | Fracture Multiple | 4 |
| 71-62283 | Bench Collapse | 5 |
| 71-62671 | Fracture Multiple | 4 |
| 71-62672 | Missing Brickwork | 4 |

**Stormwater Manhole Inspections**
All 28 public stormwater manholes in Pittsfield Village were inspected by OHM field crews. Of the 28 inspected manholes, ten (10) manholes were found to have at least one Grade-4 or Grade-5 defect (36%). A total of nine (9) Grade-4 defects and five (5) Grade-5 defects were identified. Manholes with fractures, missing brickwork, and infiltration account for the majority of the Grade-4 defects. The Grade-5 defects consist of bench collapses, holes, and surface damage. Table 4 below provides a complete list of the stormwater manholes with high grade defects, and Figure 2 in Appendix B shows the locations of the stormwater manholes with high-grade defects.

***Table 4: Pittsfield Village Stormwater Manhole High-Grade Defects***

| Manhole ID | Defect | Grade |
|---|---|---|
| 92-50199 | Missing Brickwork (x2) | 4; 4 |
| 92-50211 | Bench Collapse; Hole Soil Visible | 5; 5 |
| 92-50996 | Surface Damage Reinforcement Visible | 5 |
| 92-51029 | Infiltration Runner | 4 |
| 92-51062 | Bench Collapse | 5 |
| 92-51066 | Joint Separated Medium; Fracture Multiple | 5; 4 |
| 92-51068 | Fracture Multiple; Missing Brickwork | 4; 4 |
| 92-51069 | Surface Damage Aggregate Missing | 4 |
| 92-51074 | Fracture Multiple | 4 |
| 92-63218 | Missing Brickwork | 4 |

**Smoke Testing**
Smoke testing was completed throughout the Pittsfield Village neighborhood. The testing revealed multiple sources where groundwater and stormwater could enter into the sanitary sewer system. Smoke sources included cleanouts, the ground, manhole frame seals, vented manhole lids, and catch basins and storm inlets. The smoking storm inlets and catch basins are most likely the result of cracks and defects in the pipes and manhole structures that allow smoke to migrate from the sanitary sewer system through the ground and into the storm sewer system. After further investigation, it was determined that these catch basins do not have direct connections to the sanitary sewer system. However, it is suspected that the smoke indicates that stormwater may be able to migrate from the catch basin leads to the sanitary sewer.

Table 5 below lists the smoke sources identified, and the locations of the smoke sources are shown in Appendix A. There was also one smoke source at storm catch basin 88-56152 that did not have a picture associated with it.

***Table 5: Pittsfield Village Smoke Sources***

| Smoke Source | Quantity |
|---|---|
| Uncapped Cleanout | 3 |
| Ground | 1 |
| Manhole Frame Seal | 3 |
| Vented Manhole Lid | 3 |
| Catch Basin/Storm Inlet | 8 |
| **Total Smoke Sources =** | **18** |

## Water Budget

There can be many sources of inflow and infiltration (I&I) into a sanitary sewer system. Some common sources include manhole defects, pipeline defects, smoke sources, and connected footing drains.

The sanitary sewer evaluation survey results were used to estimate the I&I flow rates from each source type by assigning each defect and smoke source an I&I flow value in order to create a water budget. A water budget quantifies the percentage of inflow and infiltration entering the sanitary sewer system via these various sources.

Typically, it can be assumed that each connected footing drain would discharge approximately 5 gpm of flow to the sanitary sewer system during wet weather events. However, it was discovered that the footing drains in the Pittsfield Village neighborhood may contribute more flow into the sanitary sewer system than expected during wet weather events as detailed in the *June 25-26, 2021 Storm Event Analysis* report completed in April 2022. That report states the following:

*"The typical flow per connected footing drain is 1 gallon per minute (gpm) per 1-inch of rain. Considering that the June rain event produced approximately 5 inches of rain, it would be expected that each connected footing drain would normally contribute about 5 gpm to the sanitary sewer system. However, an additional flow equal to approximately 15 gpm per connected footing drain had to be added to this area in the model to produce similar results to what were witnessed…"*

The analysis completed as a part of that study suggested that the Pittsfield Village neighborhood may contribute flow *equivalent* to an additional 15 gpm per connected footing drain during wet weather events from both public I&I sources and footing drains. The water budget analysis estimated the flow contributions from public sources of I&I so that the flow contribution from footing drains could be calculated. From the hydraulic model analysis that included the increased flow in the Pittsfield Village area to mimic observed basement backup and flooding conditions, the total flow contributed by the Pittsfield Village neighborhood during the June Storm event is estimated to be about 9.9 cfs. If the I&I flow estimates from the public sources are subtracted from the total I&I flow, then the I&I contributed solely by footing drains is estimated to be about 7.9 cfs or 3550 gpm. With 356 connected footing drains in the Pittsfield Village neighborhood, this translates to a flow of about 10 gpm per footing drain. A flow contribution of 10 gpm per connected footing drain in Pittsfield Village is substantially higher than the typical flow contribution of 5 gpm per footing drain.

It should also be noted that inflow from water ponding over sanitary manholes was included in the water budget. Ponding over manholes was observed in the greenspace area bounded to the north by Norwood St., the south by Packard St., the east by Whitewood St., and the west by Pittsfield Blvd during the June 2021 rain event. There are five sanitary sewer manholes located in this greenspace area, each of which had two unplugged pick holes at the time of the rain event. According to the *June 25-26, 2021 Storm Event Analysis* report completed in April 2022, approximately 2.2 feet of water was ponded over these manholes. Using the orifice equation with a head of 2.2 feet above the manhole rim and assuming a pick hole diameter of one inch, approximately 204 gpm (0.45 cfs) of flow was estimated to have entered into the sanitary sewer system via the open pick holes in these five manholes (assuming two pick holes per manhole).

Figure 1 below depicts the water budget for Pittsfield Village, and Table 6 tabulates the results. As can be seen from Figure 1, connected footing drains account for the majority (80%) of the inflow and infiltration into the system.

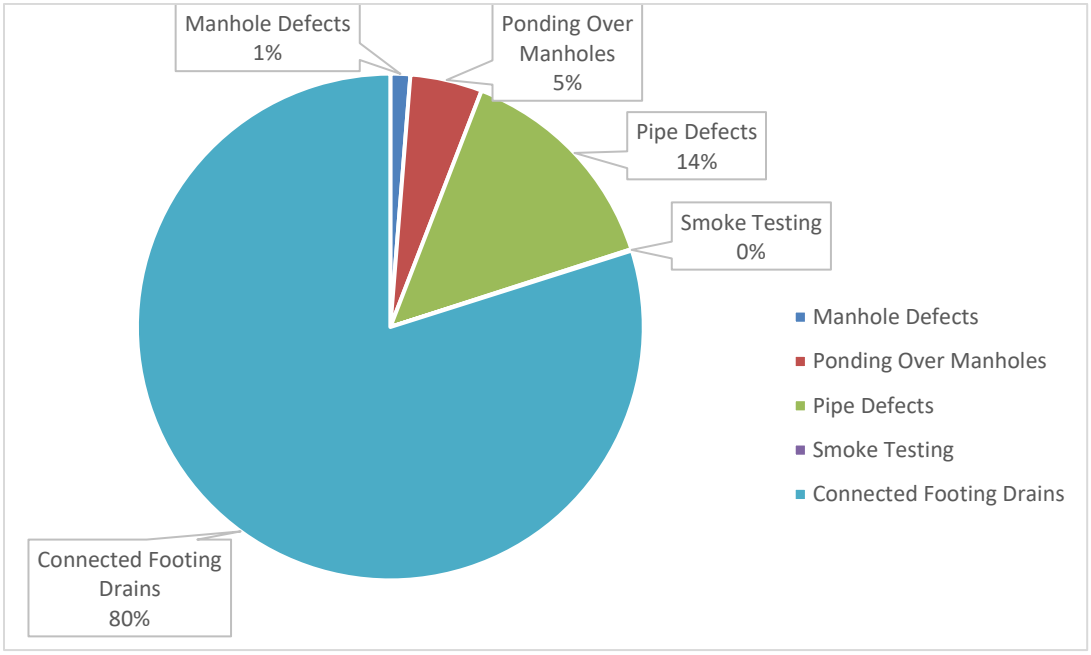



***Figure 1: Pittsfield Village Water Budget***

***Table 6: Pittsfield Village Water Budget***

| I&I Sources | I&I (cfs) | Percent of Total I&I |
|---|---|---|
| Manhole Defects | 0.13 | 1.27% |
| Ponding Over Manholes | 0.45 | 4.60% |
| Pipe Defects | 1.40 | 14.17% |
| Smoke Testing | 0.01 | 0.09% |
| Connected Footing Drains | 7.90 | 79.88% |
| **Total I&I** | **9.89** | |

## Rehabilitation Recommendations

Tables 7 and 8 below provide recommended rehabilitation methods for both sanitary sewer and stormwater pipes based on their inspection reports. Tables 9 and 10 below provide recommended rehabilitation methods for both sanitary sewer and stormwater manholes based on their inspection reports. Figures 1 and 2 in Appendix C show which sanitary and stormwater pipes and manholes have rehabilitation recommended. An estimated construction cost is associated with each asset's rehabilitation method. Table 11 provides a total estimated project cost for the rehabilitation of the sanitary and stormwater pipe and manhole assets.

***Table 7: Sanitary Sewer Pipe Recommended Rehabilitation***

| Pipe ID | Recommended Rehabilitation | Cost |
|---|---|---|
| 74-074676 | Heavy Cleaning | $958 |
| 74-074681 | Complete Remove and Replace | $46,878 |
| 74-61539 | Full Liner | $30,962 |
| 74-61540 | Full Liner | $20,109 |
| 74-61566 | Grouting | $6,615 |
| 74-62060 | Complete Remove and Replace | $26,220 |
| 74-62061 | Grouting; Spot Liner | $4,277 |
| 74-62062 | Full Liner | $16,822 |
| 74-62063 | Spot Liner; Cutting and Grouting | $11,506 |
| 74-62072 | Partial Remove and Replace; Spot Liner | $36,250 |
| 74-62075 | Full Liner | $25,280 |
| 74-62076 | Full Liner | $7,088 |
| 74-62077 | Full Liner | $8,179 |
| 74-62081 | Grouting | $6,522 |
| 74-62108 | Complete Remove and Replace | $33,180 |
| 74-62122 | Cleaning | $902 |
| 74-62590 | Cutting and Grouting | $18,602 |
| 74-62877 | Grouting | $7,464 |
| 74-62878 | Partial Remove and Replace; Grouting | $40,284 |
| 74-62879 | Partial Remove and Replace; Spot Liner; Grouting | $37,618 |
| 74-62880 | Grouting | $9,338 |
| 74-62881 | Full Liner | $25,949 |
| 74-62900 | Cutting and Grouting | $17,432 |
| 74-62905 | Cutting and Grouting | $43,289 |
| 74-62927 | Spot Liner; Cutting and Grouting | $13,115 |
| 74-62928 | Full Liner | $9,368 |
| 74-62930 | Full Liner | $9,125 |
| 74-62931 | Full Liner | $19,361 |
| 74-62933 | Complete Remove and Replace | $138,582 |
| 74-62935 | Full Liner | $2,365 |
| 74-62936 | Cutting and Grouting | $13,430 |

| | | |
|---|---|---|
| 74-62937 | Cutting and Grouting | $13,120 |
| 74-62938 | Cleaning | $156 |
| 74-62952 | Full Liner | $7,671 |
| 74-62953 | Complete Remove and Replace | $160,560 |
| 74-62958 | Partial Remove and Replace; Full Liner | $96,482 |
| 74-62959 | Full Liner | $18,316 |
| | **Total Estimated Sanitary Pipe Rehabilitation Cost =** | **$983,375** |

***Table 8: Stormwater Pipe Recommended Rehabilitation***

| Pipe ID | Recommended Rehabilitation | Cost |
|---|---|---|
| 95-065651 | Complete Remove and Replace | $42,864 |
| 95-50780 | Full Liner | $12,446 |
| 95-50781 | Full Liner | $17,438 |
| 95-50782 | Re-inspect Pipe Segment; Cutting and Grouting | $1,277 |
| 95-51253 | Spot Liner; Grouting | $86,253 |
| 95-51266 | Spot Liner | $12,000 |
| 95-51267 | Re-inspect Pipe Segment; Cleaning | $598 |
| 95-51268 | Spot Liner | $8,000 |
| 95-51287 | Spot Liner; Grouting | $88,670 |
| 95-51472 | Grouting | $4,752 |
| 95-51473 | Spot Liner | $4,000 |
| 95-51474 | Grouting | $8,507 |
| 95-51475 | Spot Liner | $4,000 |
| 95-51476 | Full Liner | $10,727 |
| 95-51481 | Full Liner | $10,006 |
| 95-51482 | Cutting and Grouting | $3,168 |
| 95-51502 | Partial Remove and Replace; Full Liner | $58,168 |
| 95-51503 | Spot Liner | $6,000 |
| 95-51504 | Grouting | $20,052 |
| 95-51505 | Complete Remove and Replace | $10,026 |
| 95-51507 | Heavy Cleaning | $534 |
| 95-51509 | Complete Remove and Replace | $97,943 |
| 95-51511 | Full Liner | $3,134 |
| 95-51517 | Complete Remove and Replace | $73,334 |
| 95-51541 | Full Liner | $1,767 |
| 95-51542 | Partial Remove and Replace; Full Liner | $281,246 |
| 95-51686 | Spot Liner | $8,000 |
| 95-68257 | Full Liner | $8,731 |
| 95-68699 | Re-inspect Pipe Segment; Heavy Cleaning | $316 |

| | | |
|---|---|---|
| 95-70572 | Full Liner | $1,288 |
| 95-70769 | Cleaning | $87 |
| 95-70829 | Heavy Cleaning | $169 |
| 95-70830 | Full Liner | $1,572 |
| 95-70838 | Spot Liner | $4,000 |
| 95-70865 | Grouting | $2,957 |
| 95-70870 | Full Liner | $10,367 |
| 95-71016 | Full Liner | $2,368 |
| 95-71213 | Complete Remove and Replace | $17,057 |
| 95-71339 | Complete Remove and Replace | $8,012 |
| 95-71360 | Complete Remove and Replace | $13,622 |
| 95-71363 | Heavy Cleaning | $191 |
| 95-71454 | Cleaning | $60 |
| 95-71459 | Heavy Cleaning | $206 |
| 95-71460 | Cleaning | $164 |
| | **Total Estimated Stormwater Pipe Rehabilitation Cost =** | **$946,077** |

***Table 9: Sanitary Sewer Manhole Recommended Rehabilitation***

| Pipe ID | Recommended Rehabilitation | Cost |
|---|---|---|
| 71-61794 | Minor Point Repair | $250 |
| 71-61796 | Major Point Repair, Rebuild Bench | $1,250 |
| 71-61797 | Rebuild Bench, Full Manhole Liner | $5,750 |
| 71-61798 | Full Manhole Liner | $5,000 |
| 71-61817 | Major Point Repair | $500 |
| 71-61827 | Reset Frame, Full Manhole Liner | $6,650 |
| 71-62269 | Rebuild Bench, Full Manhole Liner | $5,750 |
| 71-62271 | Replace Chimney, Wall Liner | $4,000 |
| 71-62275 | Replace Chimney, Wall Liner, Rebuild Bench | $5,200 |
| 71-62276 | Full Manhole Liner | $5,000 |
| 71-62277 | Major Point Repair | $500 |
| 71-62278 | Major Point Repair, Reset Frame | $1,350 |
| 71-62279 | Full Manhole Liner | $5,000 |
| 71-62280 | Reset Frame, Full Manhole Liner | $6,650 |
| 71-62283 | Major Point Repair, Chimney Liner, Rebuild Bench | $1,800 |
| 71-62670 | Major Point Repair | $500 |
| 71-62671 | Chimney Liner | $550 |
| 71-62672 | Rebuild Bench, Full Manhole Liner | $5,750 |
| | **Total Estimated Sanitary Manhole Rehabilitation Cost =** | **$61,450** |

***Table 10: Stormwater Manhole Recommended Rehabilitation***

| Pipe ID | Recommended Rehabilitation | Cost |
|---|---|---|
| 92-50181 | Root Treatment, Chimney Liner | $700 |
| 92-50186 | Replace Chimney | $1,950 |
| 92-50199 | Major Point Repairs | $1,000 |
| 92-50200 | Minor Point Repair | $250 |
| 92-50211 | Minor Point Repairs, Rebuild Bench | $1,500 |
| 92-50996 | Replace Manhole | $10,150 |
| 92-51003 | Monitor Closely | $0 |
| 92-51029 | Minor Point Repair | $250 |
| 92-51030 | Chimney Liner | $550 |
| 92-51034 | Sewer Cleaning/Vactoring, Chimney Liner | $1,050 |
| 92-51035 | Monitor Closely, Sewer Cleaning/Vactoring, Replace Frame | $2,200 |
| 92-51036 | Root Treatment | $150 |
| 92-51039 | Replace Frame, Cone Liner | $2,075 |
| 92-51040 | Monitor Closely | $0 |
| 92-51062 | Monitor Closely, Chimney Liner, Rebuild Bench | $1,300 |
| 92-51066 | Sewer Cleaning/Vactoring, Replace Frame, Full Manhole Liner | $7,200 |
| 92-51068 | Full Manhole Liner | $5,000 |
| 92-51069 | Monitor Closely | $0 |
| 92-51074 | Minor Point Repair | $250 |
| 92-63117 | Sewer Cleaning/Vactoring | $500 |
| 92-63218 | Major Point Repair | $500 |
| | **Total Estimated Stormwater Manhole Rehabilitation Cost =** | **$36,575** |

***Table 11: Total Estimated Project Cost***

| **Pittsfield Village Rehabilitation Cost** | |
|---|---|
| Sanitary Pipeline Construction Cost = | $983,375 |
| Stormwater Pipeline Construction Cost = | $946,077 |
| Sanitary Manhole Construction Cost = | $61,450 |
| Stormwater Manhole Construction Cost = | $36,575 |
| **Total Estimated Construction Cost =** | **$2,027,477** |
| Engineering and Contingency (40%) = | $810,991 |
| **Total Estimated Project Cost =** | **$2,838,500** |

Estimated project costs were developed based on bid tabulation data from 2019 and 2020. Given the market volatility due to the COVID-19 pandemic and recent inflationary increases, the City may wish to consider applying a larger contingency to the estimated construction costs for budgeting purposes.

**Recommendations**

1. Disconnect footing drains in the Pittsfield Village neighborhood.
    a. The water budget showed that a majority (approximately 80%) of the I&I flow from Pittsfield Village is attributable to connected footing drains. Disconnection of footing drains would reduce the risk for basement backups in this area in the future.

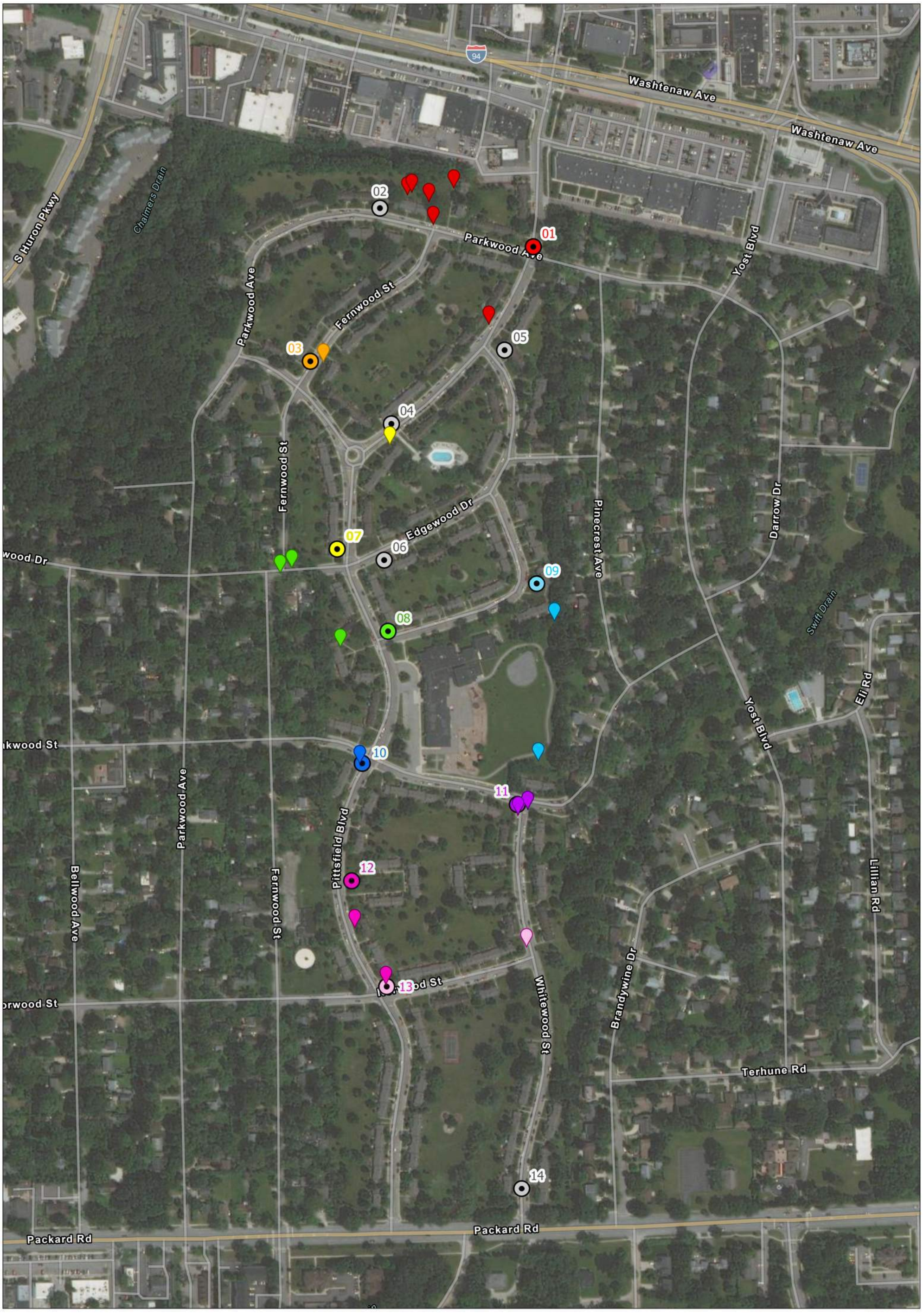
2. Repair the pipes with high-grade defects.
    a. 37 sanitary sewer pipes have rehabilitation recommended.
        i. The estimated construction cost for repairing the 37 pipes is $983,375.
    b. 44 stormwater pipes have rehabilitation recommended.
        i. The estimated construction cost for repairing the 44 pipes is $946,077.

3. Repair the manholes with high-grade defects.
    a. 18 sanitary manholes have rehabilitation recommended.
        i. The estimated construction cost for repairing the 18 manholes is $61,450.
    b. 21 stormwater manholes have rehabilitation recommended.
        i. The estimated construction cost for repairing the 21 manholes is $36,575.

4. Complete the necessary rehabilitation for the smoke sources.
    a. Uncapped cleanouts at 2265 Parkwood, 2345 Fernwood, and 2401 Pittsfield should be replaced by the resident.
    b. Completing the recommended rehabilitation for the pipes and manholes should resolve the smoking catch basin issues as the smoking catch basins are likely a result of cracks and holes in the sanitary sewer pipes and manhole structures that allow smoke (and water) to migrate from the sanitary sewer system through the ground and into the stormwater system. No direct connections from the catch basins to the sanitary sewer system were found during field investigation.
    c. Several smoke source locations require additional action by the City, as noted in Appendix A. Recommended actions include the following:
        i. City to replace manhole cover at 2272 Pittsfield with solid cover.
        ii. City to suggest to the resident at 2276 Parkwood that the private sanitary sewer (74-62087) be inspected to determine needed repairs.
        iii. City to inspect sanitary manhole 71-62272 to determine needed repairs.

# Appendix A

Smoke Testing Results




Smoking Source
Smoke Test Number
1
3
7
8
9
10
11
12
13

Blower Setup
Smoke Test Number
01
03
07
08
09
10
11
12
13
14

# Ann Abor
# Smoke Testing

N

0 400 800
Feet

1" = 400'

**Source:** Data provided by Esri and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** WGS 1984 Web Mercator Auxiliary Sphere

**Map Published:** July 7, 2022

OHM

# Ann Arbor Smoke Testing
# Smoke Sources

Smoking Source

- Storm Inlet
- Catch Basin
- Cleanout
- Manhole Frame Seal
- Vented Manhole Lid
- Ground
- Blower Setup

N

0 300 600

Feet

1" = 300'

**Source:** Data provided by Esri and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 2011 StatePlane Michigan South FIPS 2113 Ft Intl

**Map Published:** July 13, 2022

OHM

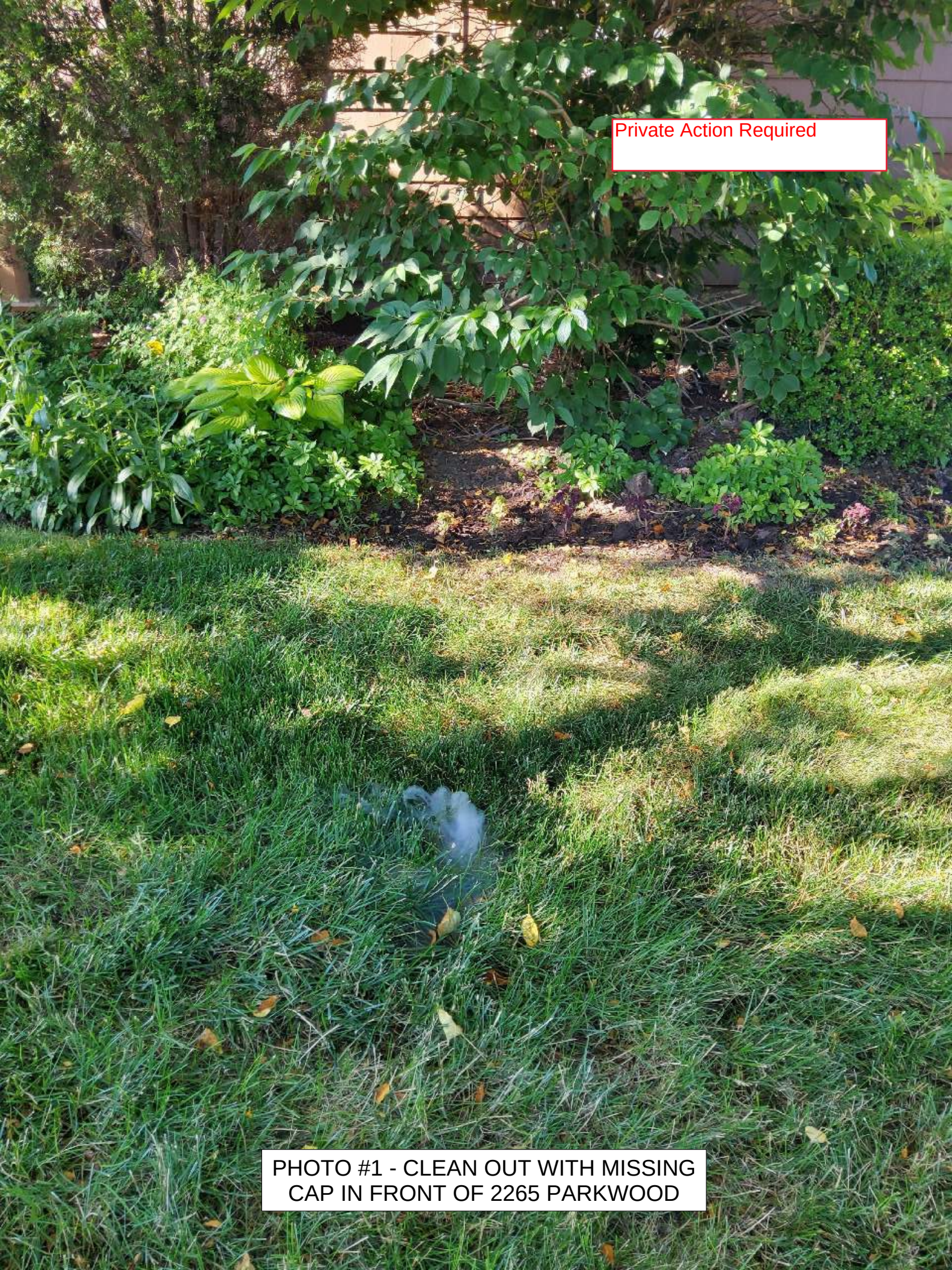



PHOTO #1 - CLEAN OUT WITH MISSING CAP IN FRONT OF 2265 PARKWOOD


Location was field verified. A manhole exists in front of 2272 Pittsfield, but does not appear in GIS. See photo at left.

City Action -
GIS does not show san MH in front of 2272 Pittsfield. Closest MH (71-61803) located in front of 2278. Field verify. Replace with solid cover.

PHOTO #2 - SANITARY MANHOLE LOCATED AT 2272 PITTSFIELD
Structure/Facility ID not shown in GIS

PHOTO #3 - STORM INLET BEHIND
2304 PARKWOOD
Structure/Facility ID not shown in GIS

PHOTO #4 - SANITARY STRUCTURE
IN FRONT OF 2304 PARKWOOD
Facility ID 71-61798

PHOTO #5 - STORM INLET LOCATED BEHIND 2304 PARKWOOD
Structure/Facility ID not shown in GIS

PHOTO #6 - SANITARY STRUCTURE
LOCATED BEHIND 2304 PARKWOOD
Facility ID 71-61817


PHOTO #7a - SIDEWALK IN FRONT OF 2276 PARKWOOD

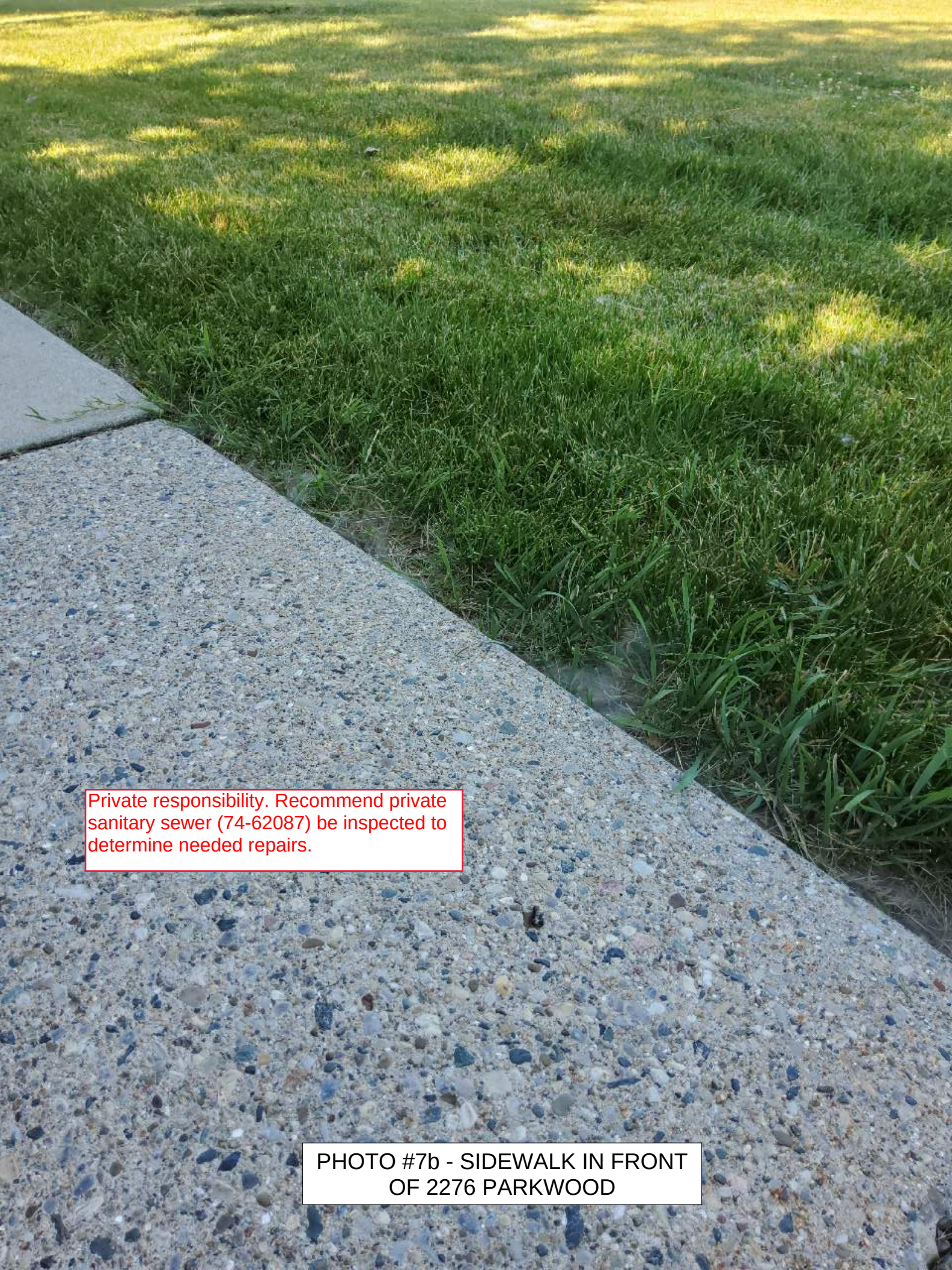



PHOTO #7b - SIDEWALK IN FRONT OF 2276 PARKWOOD


PHOTO #8 - CLEAN OUT WITHOUT CAP IN FRONT OF 2345 FERNWOOD


PHOTO #9 - CLEAN OUT FRONT OF 2401 PITTSFIELD

PHOTO #10 -STORM CB IN FRONT OF 3345 EDGEWOOD
Facility ID 88-55036

PHOTO #11 -SANITARY STRUCTURE LOCATED ON SCHOOL PROPERTY BEHIND 2445 RICHARD
Facility ID 71-62667

PHOTO #12 - STORM CB AT PITTSFIELD AND OAKWOOD INTERSECTION
Facility ID 88-55849


PHOTO #13 - STORM CB AT 2603 WHITEWOOD NEAR OAKWOOD
Facility ID 88-55820


PHOTO #14 - STORM CB AT 3430 WHITEWOOD NEAR OAKWOOD
Facility ID 88-55821

PHOTO #15 - SANITARY STRUCTURE
AT 2651 PITTSFIELD
Facility ID 71-62271

City MH 71-62272.

City to inspect MH condition. Make necessary repairs if necessary.

PHOTO #16a - SANITARY STRUCTURE NEAR 2667 PITTSFIELD
Facility ID 71-62272


PHOTO #16b - SANITARY STRUCTURE NEAR 2667 PITTSFIELD
Facility ID 71-62272

PHOTO #17 - STORM CB AT NW CORNER OF NORWOOD AND WHITEWOOD
Facility ID 88-55819

# Appendix B

Sanitary and Stormwater

Pipe and Manhole Defect Maps

# Pittsfield Village SSES- Sanitary High-Grade Defects

**Figure 1**

- Manholes Inspected
- Manholes Defect Grade 5
- Manholes Defect Grade 4
- Manholes
- Sanitary Gravity Mains Inspected
- Sanitary Gravity Mains Defect Grade 5
- Sanitary Gravity Mains Defect Grade 4
- Sanitary Gravity Mains

N

0 400 800

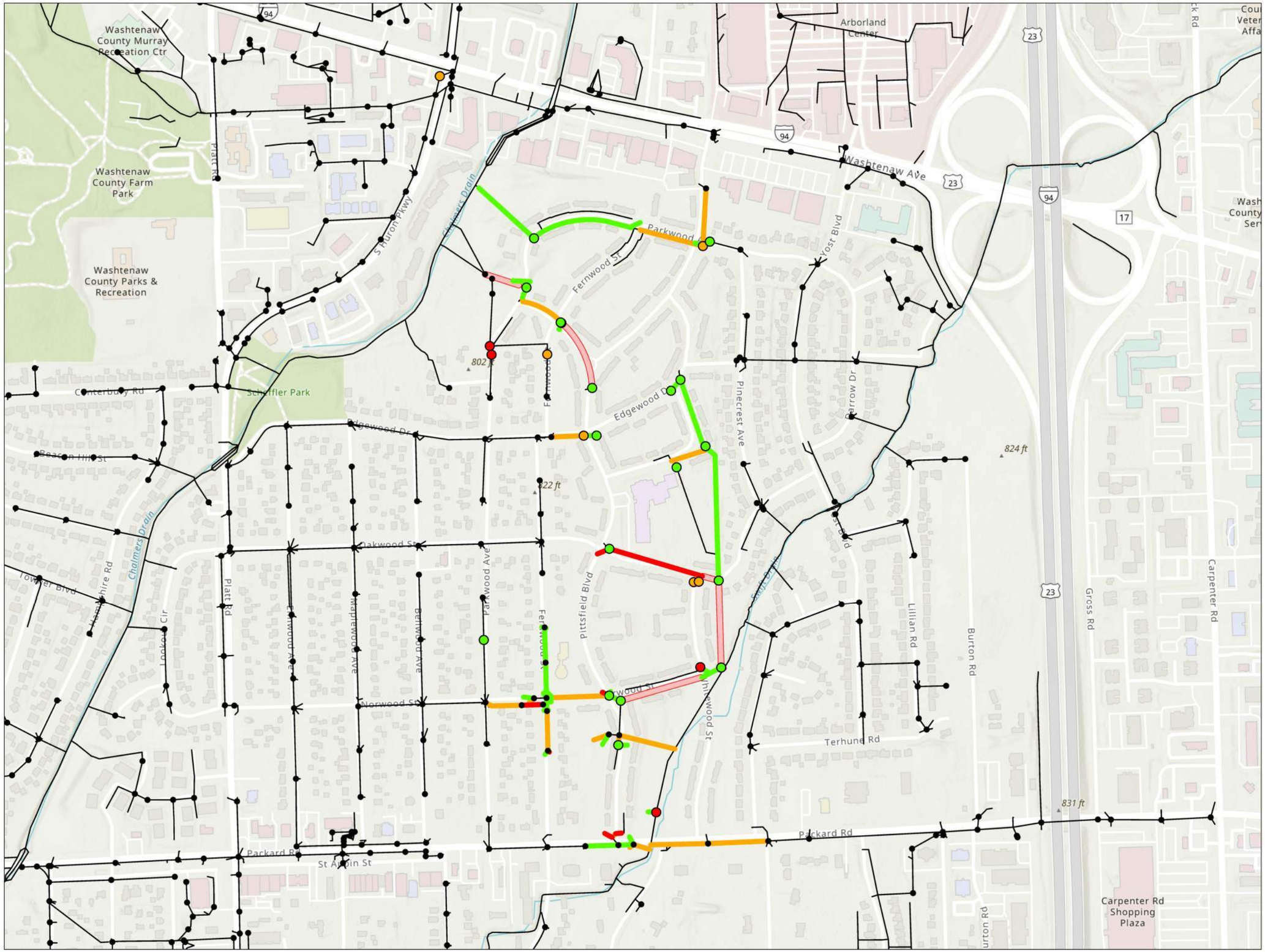
Feet

1" = 400'

**Source:** Data provided The City of Ann Arbor, ESRI and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 2011 StatePlane Michigan South FIPS 2113 Ft Intl

**Map Published:** April 26, 2023




# Pittsfield Village SSES-Stormwater High-Grade Defects

## Figure 2

- Manholes Inspected
- Manholes Defect Grade 5
- Manholes Defect Grade 4
- Manholes
- Stormwater Mains Inspected
- Stormwater Mains Deformed
- Stormwater Mains Defect Grade 5
- Stormwater Mains Defect Grade 4
- Stormwater Mains

N

0 500 1,000

Feet

1" = 500'

**Source:** Data provided The City of Ann Arbor, ESRI and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 2011 StatePlane Michigan South FIPS 2113 Ft Intl

**Map Published:** April 19, 2023

# Appendix C

Sanitary and Stormwater

Pipe and Manhole

Rehabilitation

Recommendation Maps

# Pittsfield Village SSES Sanitary Rehabilitation Recommendations

## Figure 1


- Manholes Inspected
- Manhole Full Liner
- Manhole Rehab Recommended
- Manholes
- Sanitary Gravity Main Inspected
- Sanitary Gravity Main Remove and Replace
- Sanitary Gravity Main Full Liner
- Sanitary Gravity Main Rehab Recommended
- Sanitary Gravity Mains

N

0 400 800

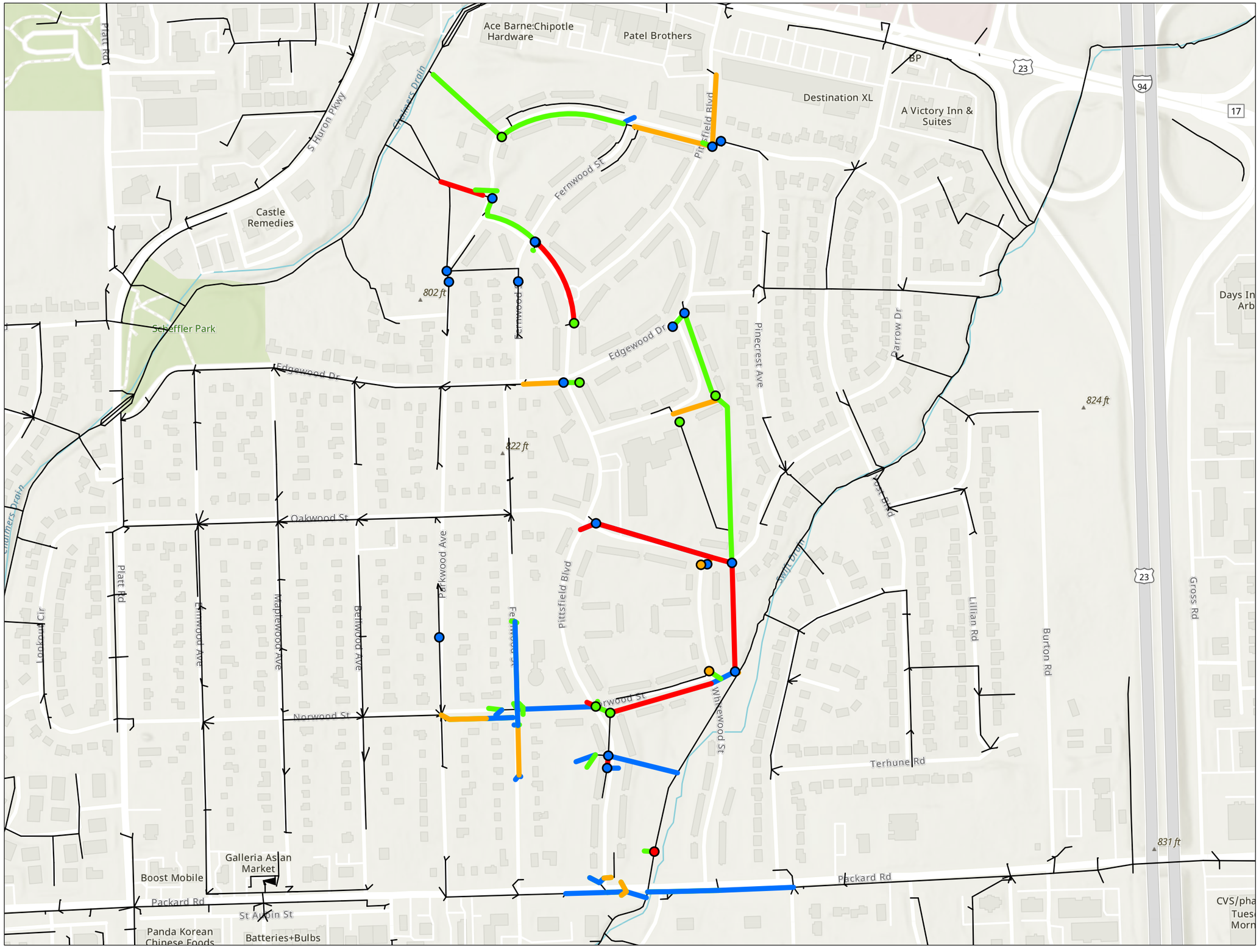
Feet

1" = 400'

**Source:** Data provided by The City of Ann Arbor, ESRI and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 2011 StatePlane Michigan South FIPS 2113 Ft Intl

**Map Published:** May 23, 2023




CITY OF ANN ARBOR MICHIGAN

# Pittsfield Village SSES- Stormwater Rehabilitation Recommendations

## Figure 2

- Manhole Inspected
- Manhole Replace
- Manhole Full Liner
- Manhole Rehab Recommended
- Stormwater Main Inspected
- Stormwater Main Remove and Replace
- Stormwater Main Full Liner
- Stormwater Main Rehab Recommended
- Stormwater Mains

N

0 400 800

Feet

1" = 400'

**Source:** Data provided by The City of Ann Arbor, ESRI and OHM Advisors. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl

**Map Published:** May 23, 2023

OHM

# Appendix D

PACP and MACP Defect Descriptions

***Description of NASSCO PACP Pipe Defects Identified in Pittsfield Village***

| Defect Type | Grade | Description |
|---|---|---|
| Broken Pipe | 4 | Broken Pipe refers to a pipe that has pieces noticeably displaced or moved from their original position. |
| Broken Soil Visible | 5 | This defect occurs when the soil surrounding the pipe is visible beyond the break in the pipe, but the soil surrounding the pipe is still in place. |
| Broken Void Visible | 5 | This defect occurs when a void or cavity in the soil is visible beyond the break in the pipe. |
| Crack Hinge | 4 | This defect occurs when more than one longitudinal crack occurs at the same footage at the 12, 3, 6, or 9 clock positions. Hinge cracks are recorded as CH2 for two cracks, CH3 for three cracks, and CH4 for four cracks. |
| Deformed | 5 | This defect occurs when the original cross-section or geometry of the pipe is noticeably changed. Deformation in rigid pipes is typically associated with the loss of structural integrity of the pipe. |
| Deposits Attached Encrustation (DAE) | 4/5 | Deposits Attached Encrustation are deposits left by the partial evaporation of infiltrating groundwater containing dissolved salts or minerals. Without periodic cleaning, DAE can build up over time resulting in the loss of some or all of the cross-sectional area of the pipe. This defect is classified as a Grade-4 defect when the DAE buildup blocks 20%-30% of the pipe's cross-sectional area, and is classified as a Grade-5 defect when the DAE buildup blocks over 30% of the pipe's cross-sectional area. |
| Deposits Settled Fine/Other | 4/5 | This defect occurs when there is deposited material with small particle size settled in the pipe or if the settled deposits are not classified by other codes. This defect is classified as a Grade-4 defect when the deposits buildup blocks 20%-30% of the pipe's cross-sectional area, and is classified as a Grade-5 defect when the deposits buildup blocks over 30% of the pipe's cross-sectional area. |
| Deposits Settled Gravel | 4/5 | This defect occurs when there is deposited material with large particle size settled in the pipe. This defect is classified as a Grade-4 defect when the deposits buildup blocks 20%-30% of the pipe's cross-sectional area, and is classified as a Grade-5 defect when the deposits buildup blocks over 30% of the pipe's cross-sectional area. |
| Fracture Hinge | 4 | This defect occurs when more than one longitudinal fracture occurs at the same footage at the 12, 3, 6, or 9 clock positions. Hinge fractures are recorded as FH2 for two fractures, FH3 for three fractures, and FH4 for four fractures. |
| Fracture Multiple | 4 | A Fracture Multiple defect occurs when a combination of longitudinal and circumferential fractures intersect. A fracture is a break line that has become visibly open and a gap can be seen. |
| Hole | 4 | This defect occurs when the pipe material is missing due to severe breaks or fractures in the pipe wall. |
| Hole Soil Visible | 5 | This defect occurs when the soil surrounding the pipe is visible beyond the hole in the pipe, but the soil surrounding the pipe is still in place. |

| | | |
|---|---|---|
| Hole Void Visible | 5 | This defect occurs when a void or cavity in the soil is visible beyond the hole in the pipe. |
| Infiltration Runner | 4 | An Infiltration Runner occurs when a steady stream of water enters through the body or wall of the pipe. |
| Joint Offset Large | 4 | This defect occurs when the pipe joint is offset greater than or equal to 1.5 pipe wall thickness. |
| Line Left | 4 | This defect occurs when the pipe deviates left more than 20%. |
| Line Right | 4 | This defect occurs when the pipe deviates right more than 20%. |
| Miscellaneous Camera Underwater (MCU) | 4 | This code describes the occurrence of when the CCTV camera goes underwater. This often occurs due to debris, rocks, or sediment buildup in the pipe. |
| Miscellaneous Water Level Sag | 4/5 | This defect occurs when there is a sag, dip, or low spot in the pipe allowing water to be trapped by a reverse grade downstream. This defect is classified as a Grade-4 defect when the pipe sags 50%-75%, and is classified as a Grade-5 defect when the pipe sags over 75%. |
| Point Repair Patch Defective | 4 | This defect occurs when a patch that was installed to repair a hole or other defect is defective. |
| Root Ball at the Barrel | 4 | This defect occurs when a large mass of roots (>50%) enters the pipe along the wall of the pipe. |
| Surface Damage Missing Wall | 5 | This defect occurs when severe surface damage has let to a portion of the pipe material being completely missing due to corrosion or erosion over time. |
| Tap Break-In Intruding | 4/5 | This defect occurs when the break-in tap or a portion of it intrudes into the sewer main. This defect is classified as a Grade-4 defect when the length of the intruding tap is equal to 20%-30% of the pipe's diameter, and is classified as a Grade-5 defect when the length of the intruding tap is over 30% of the pipe's diameter. |

***Description of NASSCO MACP Manhole Defects Identified in Pittsfield Village***

| Defect Type | Grade | Description |
|---|---|---|
| Bench Collapse | 5 | This defect occurs when the bench has collapsed. |
| Channel Collapse | 5 | This defect occurs when the pipe channel has collapsed. |
| Cracked Frame | 4 | This defect occurs when the frame is cracked but still in one piece. |
| Deposits Attached Ragging (DAR) | 4 | This defect occurs when deposits such as paper debris and other refuse snag on defects such as roots or broken pipe. |
| Fracture Multiple | 4 | A Fracture Multiple defect occurs when a combination of longitudinal and circumferential fractures intersect. A fracture is a break line that has become visibly open and a gap can be seen. |
| Hole Soil Visible | 5 | This defect occurs when soil surrounding the manhole structure is visible beyond the hole in the structure. |
| Infiltration Runner | 4 | An Infiltration Runner occurs when a steady stream of water enters into the manhole structure. |
| Joint Separated Medium | 4 | This defect occurs when the pipe joint is separated greater than 1 pipe wall thickness. |
| Missing Brickwork | 4 | This defect occurs when one or more bricks are missing from the manhole structure. |
| Missing Mortar Large | 4 | This defect occurs when the mortar between the brickwork has receded over two inches. |
| Surface Damage Aggregate Missing | 4 | This defect occurs when severe surface damage causes some of the aggregate in the manhole wall to fall out creating small pits in the manhole wall. |
| Surface Damage Reinforcement Visible | 5 | This defect occurs when surface damage in reinforced concrete structures causes sufficient concrete to be missing exposing the reinforcement within the manhole wall. This defect is often associated with $H_2S$ (hydrogen sulfide) damage. |
| Surface Damage Reinforcement Projecting | 5 | This defect occurs when severe surface damage in reinforced concrete structures causes significant corrosion that leaves reinforcement projecting out from the manhole wall. |

# memorandum

**Date:** January 20, 2023

**To:** Troy Baughman, City of Ann Arbor
**cc:** Robert Czachorski, OHM Advisors
**From:** Mackenzie Johnson, OHM Advisors

**Re:** Pittsfield Village Curb Drain Study

## Project Background

A large rain event occurred on the evening of June 25, 2021 into the early morning hours of June 26, 2021 resulting in numerous reports of flooding and basement backups in Washtenaw and Wayne Counties including portions of the City of Ann Arbor. The Pittsfield Village neighborhood and surrounding streets were the most impacted areas within the City of Ann Arbor.

In response to the flooding and basement backups, the City of Ann Arbor requested OHM Advisors to perform a sanitary sewer analysis to better understand the cause of the basement backups in this area and to provide recommendations on system improvements that would minimize the potential for similar occurrences in the future. One of the recommendations from that analysis was to encourage residents to disconnect their footing drains from the sanitary sewer system to reduce the amount of inflow into the sanitary sewer system during wet weather events. This would reduce the risk for future sanitary sewer surcharges and basement backups.

As a part of a footing drain disconnection, a sump pump would be installed to collect the water from the footing drain and discharge it away from the building foundation. The City of Ann Arbor requested OHM Advisors to perform a curb drain study to identify locations where curb drains can be extended to properties to facilitate sump pump discharge connections. This will allow for the water from the sump pump to be discharged directly to the stormwater system instead of the ground surface. This technical memorandum details the process used to develop the proposed curb drain layout and provides a recommended layout for the proposed curb drains.

## Data Analysis

The City of Ann Arbor's GIS database was used to review the City's existing public stormwater system layout within the Pittsfield Village neighborhood. Based on the existing system layout, properties without a curb drain directly adjacent to the property were identified and are shown in Figure 1 of Appendix A. Properties that currently have sump pumps are indicated on the figure in Appendix A as well. Out of the 422 residences within the Pittsfield Village neighborhood, 86 residences currently have sump pumps.

## Proposed Curb Drain Layout and Sizing

The basis for development of the proposed curb drain layout included three factors:

1. The proposed curb drain layout allows for each Pittsfield Village property without an adjacent stormwater pipe to have direct access to a stormwater curb drain for sump pump discharge connections. Curb drains are not being proposed where a stormwater pipe exists along the same side of the street.
2. The proposed curb drain layout minimizes the lengths of curb drain needed.
3. The proposed curb drain layout considers ground elevations for gravity flow conveyance to existing stormwater infrastructure.

The proposed curb drain layout is shown in Figure 1 of Appendix B. The proposed curb drain layout provides each Pittsfield Village property with direct access to a curb drain if the property does not already have access to an existing stormwater pipe on the same side of the street. It was assumed that the Pittsfield Village Condominium Association will extend private curb drains to the properties that are not located directly adjacent to the street. These properties are circled in Figure 1 of Appendix B.

In order to size the curb drains, the amount of flow to be discharged to each stretch of curb drain was estimated based on the number of properties tributary to each curb drain. Typically, it can be assumed that each property would discharge approximately 5 gpm from the sump pump to the curb drain since footing drains can be estimated to contribute 3-5 gpm during wet weather events. However, it was discovered that the Pittsfield Village neighborhood may contribute more inflow and infiltration into the sanitary sewer system than expected during wet weather events as detailed in the *June 25-26, 2021 Storm Event Analysis* report completed in April 2022. That report states the following:

*"The typical flow per connected footing drain is 1 gallon per minute (gpm) per 1-inch of rain. Considering that the June rain event produced approximately 5 inches of rain, it would be expected that each connected footing drain would normally contribute about 5 gpm to the sanitary sewer system. However, an additional flow equal to approximately 15 gpm per connected footing drain had to be added to this area in the model to produce similar results to what were witnessed…"*

The analysis completed as a part of that study suggests that the Pittsfield Village neighborhood may contribute flow equivalent to an additional 15 gpm per connected footing drain during wet weather events. It should be noted that it is not expected that all of this flow is contributed directly from connected footing drains, but rather a portion of this flow likely comes from infiltration through pipe and manhole defects as well as from surface water flooding entering the sanitary sewer system via manhole pickholes or other routes. However, to be conservative for curb drain sizing purposes, it can be estimated that each property will contribute up to 15 gpm of flow to the curb drain during large wet weather events.

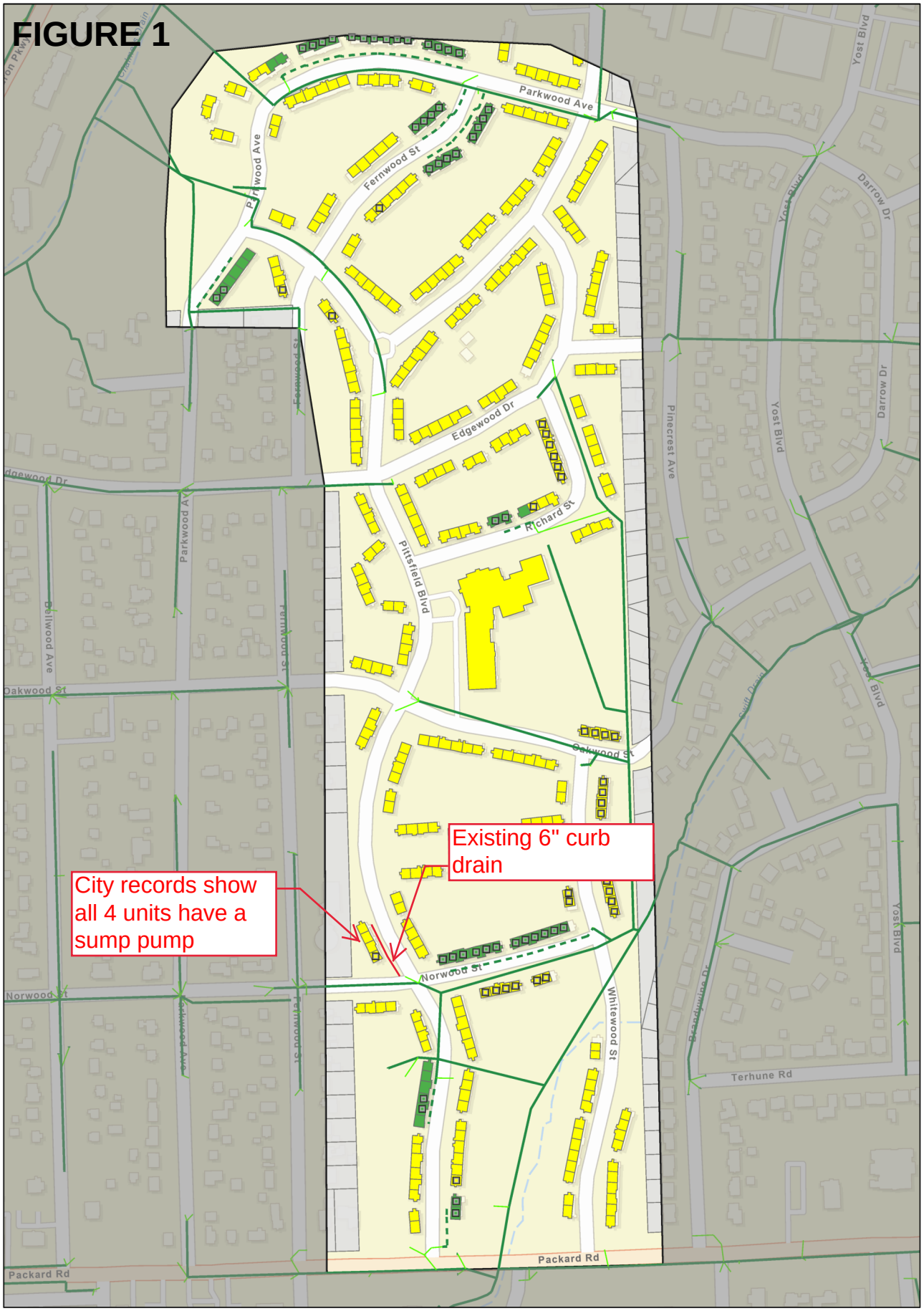
Based on the proposed curb drain layout, the longest stretches of proposed curb drain will collect flow from 18 properties. Thus, the highest amount of flow to be conveyed by a single stretch of curb drain is estimated to be about 270 gpm, or 0.602 cfs. A 6-inch curb drain with a minimum slope of 0.4% can convey a maximum flow of 0.355 cfs and an 8-inch curb drain with a minimum slope of 0.4% can convey a maximum flow of 0.764 cfs, so a combination of 6-inch and 8-inch curb drains can be used. Based on the estimated peak flow to be contributed by each property, 6-inch curb drains are recommended to be installed along stretches with fewer than 11 tributary properties, and 8-inch curb drains are recommended to be installed along stretches with 11 or more tributary properties at slopes no less than 0.4%. The estimated total length of 6-inch curb drains needed is approximately 5,813 linear feet. The estimated total length of 8-inch curb drains needed is approximately 5,356 linear feet.

Connected footing drains typically account for a significant portion of inflow into the sanitary sewer system, and removing a majority of this flow would reduce the risk for sanitary sewer surcharges and basement backups in the future. The extension of stormwater curb drains within Pittsfield Village will facilitate footing drain disconnections and subsequent sump pump discharge connections, thus further reducing the risk for basement backups during future wet weather events.

# Appendix A

Existing Conditions

# FIGURE 1




Sump Pump
Condominium - Curb Drain Access
Condominium - No Curb Drain Access
Peripheral Parcel
Stormwater Main
Curb Drain
Inlet Lead

N

## Curb Drain Access

Pittsfield Village - Ann Arbor

0 250 500
Feet

1" = 250'

**Source:** Data provided by City of Ann Arbor, Washtenaw County, OHM Advisors, and Esri. OHM Advisors does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl

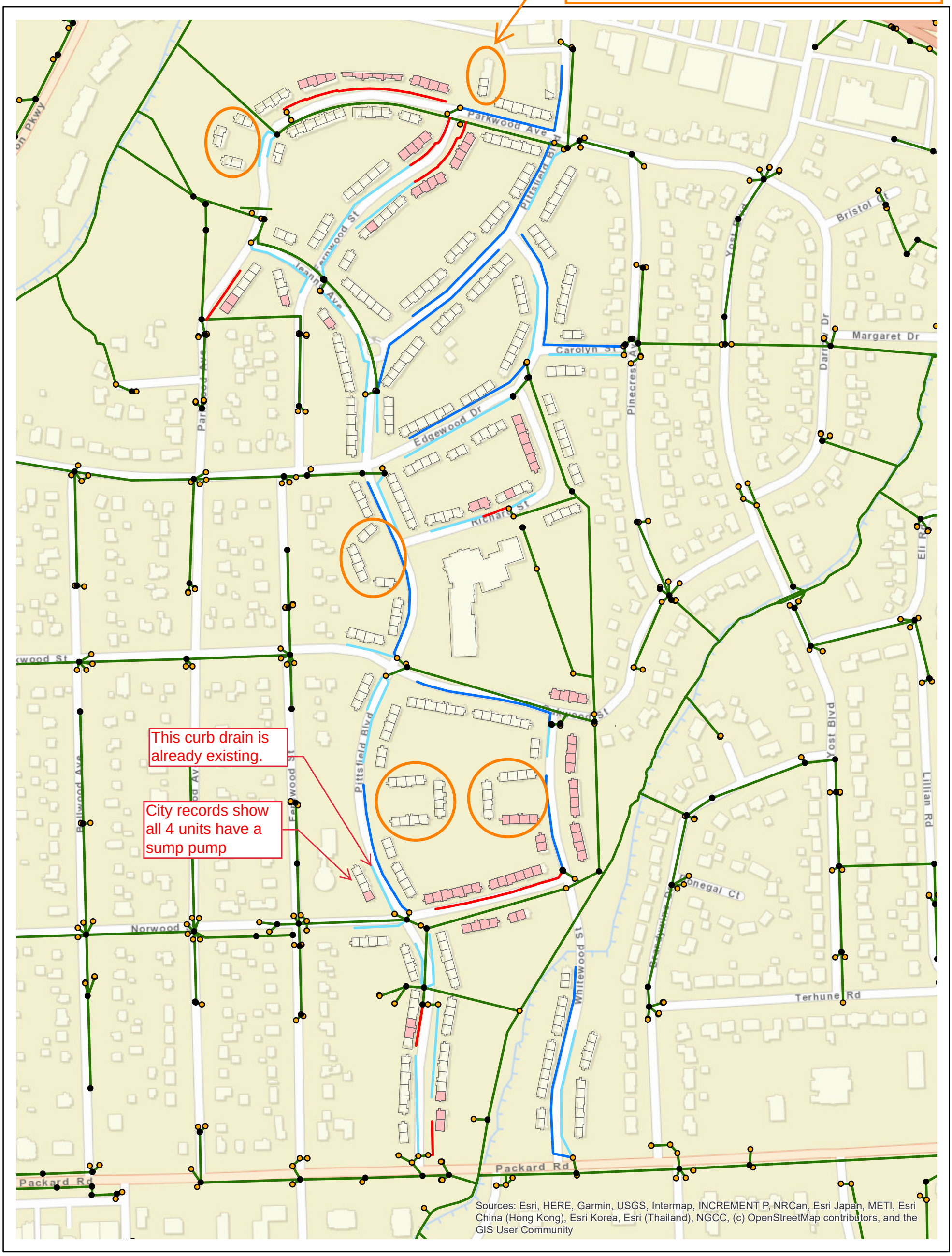
**Map Published:** December 7, 2022

OHM

# Appendix B

Proposed Curb Drain Layout

# FIGURE 1




## Legend

- Storm Manhole
- Storm Catch Basin
- Pittsfield Village Parcel
- Parcel with Sump Pump
- Existing Storm Sewer
- Existing Curb Drain
- Proposed 6" Curb Drain
- Proposed 8" Curb Drain

# Proposed Curb Drain Layout

## Pittsfield Village - City of Ann Arbor

N

0 400 800 Feet

1 inch = 292 feet

**Source:** Data provided by City of Ann Arbor, Washtenaw County, OHM Advisors, and Esri. OHM Advisors does not warrant theaccuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Communityand all use is strictly at the user's own risk.

**Coordinate System:** NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl

**Map Published:** November 5, 2022

CITY OF ANN ARBOR MICHIGAN

OHM

## PROPOSED WORK PLAN

Pittsfield Village is a unique Ann Arbor neighborhood that was originally constructed at the end of World War II to house workers at Willow Run, and subsequently became a housing destination for GI's returning from the War. Designed and built by local architect Charles Noble in 1945-46, the neighborhood features a modern utopian design including extensive townhomes laid out within large open commons spaces. The original utility infrastructure within Pittsfield Village generally dates to the original construction and much of this infrastructure has reached the end of its useful life.

The following section describes our project understanding and subsequently details our project work plan and approach to handling the large multi-faceted design effort.

## PROJECT UNDERSTANDING

The City has identified various proposed transportation, stormwater, sanitary and water system improvements across multiple planning processes over the past decade for the Pittsfield Village area. The overall goal of this project is to integrate those individual system needs for a comprehensive project that addresses all major issues within the Pittsfield Village Project Limits.

The City specifically requires design work and preparation of construction plans and specifications suitable for bidding all elements of the project which include road improvements, sanitary sewer and stormwater system upgrades, stormwater quantity and quality improvements, installation of new curb drain, water main(s) replacement, curb and gutter replacement, construction of new sidewalk and/or the filling in of sidewalk gaps, and installation of a bike corridor within the project limits.

As many of the individual recommendations were made without consideration for other types of improvements, OHM Advisors (OHM) understands that project scope may shift due to budget, capacity or other design constraints.

**Water Main Improvements**

The project includes the replacement and upsizing of approximately 9,100 feet of existing asbestos cement water main throughout the Pittsfield Village neighborhood. In coordination with the water main replacement effort, elimination of three (3) master meters that serve the entire Pittsfield Village neighborhood is considered. This master meter elimination must take place in coordination with the City's efforts to install individual water meters within each of the over 400 units in Pittsfield Village. Also, given the age of construction, it's understood that some lead service replacements will be required on the homeowner's side of the curb stop valve. These lead service line replacements must be coordinated with the City's Public Works Unit prior to the proposed water main replacement.

**Stormwater Improvements**

OHM will prepare a comprehensive Stormwater Improvements Plan to provide both water quality improvements during smaller storm events, and peak flow attenuation during larger storm events.

The stormwater plan should incorporate previous studies and analysis including:

- 2015 Stormwater Hydraulic Model Calibration and Analysis Project

- June 25-26, 2021 Storm Event Analysis
- 2023 Curb Drain Plan
- 2023 Sanitary Sewer and Stormwater Evaluation Survey
- Ongoing WCWRC Swift Run Watershed Study

Utilizing these prior efforts, OHM shall perform hydraulic analyses and prepare a written report for the proposed stormwater improvements. OHM shall update the City's hydraulic stormwater model (InfoSWMM) reflecting the final stormwater design. The City will provide supplemental CCTV data on storm sewers and additional manhole or catch basin inspections are to be performed by OHM.

OHM shall specifically review previous recommendations to improve street/surface flooding in the Parkwood/Pittsfield area as identified in the 2015 Stormwater Hydraulic Model Calibration and Analysis Project. These results will be impacted by the stormwater detention basin that was subsequently constructed at 3500 Washtenaw Avenue.

The Plan will include recommendations for the construction of stormwater improvements such as, but not limited to, bioretention areas with native plantings and grasses (rain gardens), hydrodynamic separators (pre-cast, swirl chamber type systems), oversized conveyance/detention pipes, and storm structures with internal overflow weirs or other applicable best management practices. It will also evaluate existing road drainage and make recommendations to expand the stormwater system if necessary.

The improvements recommended in the Stormwater Improvements Plan shall be incorporated into the design documents for construction with the overall Pittsfield Village Project.

Funding for any work related to curb drain improvements, or other storm sewer work specifically designed to handle sump pump discharge may come from the Developer's Offset Mitigation (DOM) Program. OHM will track and prepare cost estimates separately for these improvements.

**Sanitary Sewer Improvements**

The project includes the upsizing of approximately 1,700 feet of existing 8-inch sanitary sewer to 12-inch sewer along Norwood Street from Bellwood Avenue to east of Whitewood Street near the Swift Run Drain. This project was previously recommended to improve wet weather capacity in the City's 2018 Sanitary Sewer Improvements and Preliminary Engineering project. The design effort will include verification of the original conceptual project design.

In addition, the City recently completed a sanitary sewer and stormwater evaluation survey in the Pittsfield Village area based on CCTV and manhole inspections. The proposed work will include review and validation of the recommendations from these previous evaluations, and supplemental inspections will be performed, as necessary, to gather sanitary information for the entire project area. The City will provide supplemental CCTV data on sanitary sewers and additional manhole inspections will be performed by OHM.

Maintenance concerns related to flat pipe slopes, poor manhole channels, and shallow sanitary sewer have also been raised by City staff in the past. OHM will prepare a comprehensive sanitary replacement and rehabilitation plan based on the inspection data and existing pipe capacity/maintenance concerns.

The sanitary improvements that are related to sanitary wet weather improvements will potentially be funded through the City's Developer's Offset Mitigation (DOM) Program. All work potentially funded through DOM shall be tracked

separately so that costs related to wet weather capacity improvements can be managed by the City.

**Roadway and Right-of-Way Improvements**
The City has identified approximately 2.7 miles of roadway for rehabilitation or reconstruction within the Pittsfield Village neighborhood and sections immediately adjacent that overlap with proposed utility improvements. Generally, the road cross sections within the project area may not be adequate for rehabilitation and the design effort will include the geotechnical investigation necessary to confirm road rehabilitation or reconstruction needs.

In addition to the proposed roadwork, the project will include the development of a Pedestrian/Mobility Improvements Plan for the entire project area. This will include filling existing sidewalk gaps such as along Whitewood Street and implementation of an All Ages and Abilities (A3) bike corridor along Edgewood Drive and Pittsfield Boulevard.

The road improvements present a unique challenge given the layout of a neighborhood that includes over 400 units with no off-street parking. The parking impacts on day-to-day life for area residents will create a project that is personal, requiring innovative staging and extensive coordination to adequately address the challenge.

**Public Engagement**
The City has completed the Engagement Toolkit to assess the level of engagement needed for this project. The engagement effort shall include at a minimum:

- Attend an Engagement Kick-off meeting
- Use community input collected in earlier studies as a consideration for developing improvements within the project area
- Develop regular public updates through a variety of channels
- Provide at least three in-person presentations during the design and implementation process. Prepare fliers or infographics to be distributed in coordination with the in-person events
- Work with the following pre-determined groups throughout the project:
  - *Project Working Group*
  - *Residents, likely through the Pittsfield Condominium Association*
  - *Various boards, commissions, and City Council on an as needed basis*
- Work with the City's Communications Department and Community Engagement Specialist to consider all necessary channels to promote public informational sessions.

## PROJECT APPROACH

To meet the expectations of the City of Ann Arbor and complete the varied project design goals outlined in this RFP, the selected consultant will require a unique set of skills and expertise, as well as diversity amongst its technical disciplines, with an absolute commitment to teamwork, project management, coordination, and responsiveness. OHM is uniquely qualified for this project because we provide a highly qualified and motivated team of multi-disciplined engineers and technicians under an organizational structure and culture that promotes innovation, efficiency, collaboration, and exceptional service to our clients. This allows OHM to build longstanding relationships with our clients, as partners in their ongoing efforts to provide a high level of public service to their community. We look forward to following this model of success and continue our positive relationship with the City of Ann Arbor and the Public Services Area Engineering Unit to execute this project.

OHM is uniquely familiar with the challenges faced within the Pittsfield Village Neighborhood and has assisted the City in multiple conceptual level planning projects that have led to identifying the needs for this project.

OHM also provides most of the services required for this project under current as-needed contracts, such as the Construction Inspection Services Contract, the General Engineering Services Contract with Public Works, and the General Engineering Services Contract with the Engineering Unit. OHM Advisors understands City standards, procedures, and personnel with an understanding of the high standards necessary to successfully execute City projects. As an added level of familiarity for the City on this project, the OHM management team for this

project includes Cresson Slotten, who joined OHM after a career of over 33 years with the City's Public Services Area, and Chris Elenbaas, who spent four years with the City's Public Works Unit and has assisted the City with engineering projects across multiple service areas and units.

The Pittsfield Village Improvements represent a compilation of multiple CIP needs the City is seeking to address (approaching $18,000,000 in CIP programming), which will require a sophisticated and coordinated approach with a diverse and talented team. We have assembled our proposal with project members that deliver this project in a successful and meaningful way. Below are the main principles of our approach.

**Create a Shared Vision**
Project processes will incorporate flexibility, offering the latitude to think outside the box and reach the final and optimal methods of improvement. We will work iteratively, examining potential alternatives to reach the most effective design solutions.

**Balance Project Desires with Available Resources**
Our team understands that resources are finite. Our team will seek to leverage resources in innovative ways to deliver the most effective project design.

**Deliver Design and Engineering Excellence**
For over 60 years, OHM has served as trusted advisors to communities throughout the Midwest region. Our success comes from an unyielding passion for multi-disciplinary and integrated design and engineering with the goal of improving communities. Our team members are leaders in their respective fields and our approach combines our collective expertise, delivering projects which are innovative, ambitious, and actionable. Our approach is not a collection of silos but an integrated and collaborative team which works seamlessly across disciplines. We will work closely to deliver partner agency coordination, community engagement, road design, non-motorized design, and utility infrastructure design in parallel, exercising rigorous collaboration, which when taken together creates a whole greater than the sum of its parts. In the following paragraphs, we outline our approach to certain aspects of successful project execution.

**Public Engagement**
OHM Advisors' Christine Spitzley with join with Project Innovations' Charlie Fleetham to lead the public outreach for this project. The team's philosophy regarding public engagement is to engage the public early and often, both emotionally and physically. Successful public engagement builds trust on two levels: 1) trust in the project team's technical competence and 2) the project team's willingness to truly listen to the stakeholders. A well-publicized timeline, clearly established milestones, and easily accessible digital records offer transparency. Competently facilitated meetings and fruitful conversations will create a collaborative environment to discuss complex topics in a safe space.

Charlie has been a professional facilitator for more than 35 years and has exceptional qualifications to make this project a success: public engagement experience, facilitation expertise, experience with municipal engineering projects and experience partnering with Ann Arbor project teams on public engagement. Additionally, he has conducted several facilitation training sessions with Ann Arbor staff. Although the City's projects were often challenging, successful outcomes have been uniformly achieved.

**Water Resources**
Our Water Resources team brings energy and a clear understanding of the problem; the persistence of basement backups, surface flooding during large storm events, and the

lasting societal impacts they have caused, including water quality impairments. Last year, we worked with the City of Ann Arbor to analyze the June 25th–26th, 2021 storm event and impacts it caused in the Pittsfield Village neighborhood. We have worked with utilities on eliminating combined sewer overflows (CSO) and stormwater management planning and implementation across the Midwest and throughout Michigan. OHM understands the regional collection system and the stormwater issues facing Pittsfield Village at the local level. Our team understands the challenges in implementing innovative solutions that minimize the occurrence of flooding events, and how to optimize green stormwater infrastructure site selection.

Robert Czachorski will lead OHM's modeling and hydraulic analysis efforts for both the stormwater and sanitary collection systems on this project. He has nearly 30 years of deep experience in sewer system hydraulics. As OHM's Practice Leader for Collection Systems, Robert has performed dozens of flow monitoring and modeling analyses for communities of all sizes and system complexities. Robert developed a hydrologic model for antecedent moisture impacts on sewer systems that has been applied to hundreds of sewersheds greatly improving the understanding of system flows, leading to more optimized recommendations and improvements. He served as the technical lead for OHM's role, as well as the City's, in analyzing the June 25th–26th, 2021 storm event in Pittsfield Village for the City of Ann Arbor.

Mackenzie Johnson will serve as the modeling lead and brings over eight years of experience with collection system modeling and analysis. She's assisted with numerous City of Ann Arbor efforts, including direct experience with the Pittsfield Village area in her role as project engineer for the June 25th–June 26th, 2021, storm event analysis efforts.

**Mobility and Transportation**

Our team will work collaboratively with the City to understand how the key Pittsfield Village corridors fit within the mobility network and carefully integrate various transportation modes into the project design.

Bicycle facilities, sidewalks, transit stops, and on-street parking all need to be carefully considered in the design process to ensure that each can provide the anticipated benefits to users. Our team is well versed in designing complex streets with multiple users, including Auburn Road in Rochester Hills, Nine Mile Road and 13 Mile Road in Farmington Hills, and stretches of Michigan Avenue for MDOT.

Our team is well-versed in southeast Michigan construction, including heavily traversed urban corridors. We will employ our professional expertise and industry best practices. We will look to utilize in-place roadway infrastructure when available, balancing project cost and desired facilities.

**Utility Infrastructure**

As a multi-disciplinary team, our project delivery closely integrates utility engineering into the project design. Clients have trusted our team to develop reliable and cost-effective designs. Effective planning, innovative design, and maintainable solutions are key to maximizing long-term integrity of municipal services.

In addition to the technical requirements of the water main design, our team excels at strategic planning of pipeline alignment to overcome logistical challenges associated with maintaining water service during construction in tight corridors that involve deteriorating systems. This ensures successful permitting and community support, value engineering and integration into other ongoing or future projects in the vicinity.

Chris Elenbaas will oversee our utility design and engineering effort from OHM's Ann Arbor office, with assistance from dedicated project engineers and designers, who all have a strong understanding of the City's utility system and the challenges associated with major utility work. Our team will ensure the infrastructure improvements are seamlessly integrated into the overall project plan.

**Project Management**

A project as multifaceted as the Pittsfield Village Project requires a rigorous approach to team organization, communication, and project delivery. We will establish and implement sound project management strategies from the onset of the project and continuously employ them during the work. The management team of George Tsakoff, Chris Elenbaas, and Cresson Slotten will manage the various aspects for the design phase of this project while maintaining coordination and seeking appropriate approvals from the City. While this project management effort will continue during the entire design phase of the project with on-going client communication, team management, and budget oversight, there are also other broader, overarching efforts detailed in the scope of work.

Through effective project management, our team will maintain effective communication throughout the course of the project, establishing clear goals and objectives to guide project development, maintain and monitor schedule and milestones, and control project costs.

**Project Meetings**
Consistent, clear, and effective communication amongst the Project Team members (City, OHM staff, and subconsultant team members) is key to a successful project, while keeping in mind the City's goals and objectives for the project. This will be achieved through regularly scheduled meetings of the Project Team as coordinated by the OHM Project Management Team.

Specific work sub-tasks will include the following:

- After the Notice to Proceed from the City, OHM will schedule a Project Kick-Off Meeting with the City's Project Manager and key project staff to review and confirm the project scope, review the project schedule, and to establish the Project Team's roles and responsibilities.
- At the Kick-Off Meeting a schedule of Project Check-In/Status Meetings will be set at recurring intervals and key milestones along the project timeline. For this project, OHM has anticipated bi-weekly Project Check-In/Status Meetings with the City's Project Manager. This standing meeting will occasionally be used for more extensive discussions with other internal City stakeholders.

### Project Meetings OHM Deliverables

- Meeting Agendas
- Meeting Minutes

**Quality Assurance and Quality Control Plan**
Quality is a fundamental project goal of OHM. Project quality begins with a team commitment to produce the best possible work product consistent with our clients' goals and expectations. Sound project management and effective communication are critical components. OHM's commitment to excellence is what we strive for and is demonstrated as part of our comprehensive QA/QC program.

QA/QC reviews will be performed at all critical milestones in the project. Time for project reviews is included in the project schedule. Reviews are tracked and documented by each team member to certify completion of the review.

The results of a strong QA/QC program benefit our team and the City by delivering on-time and within-budget projects. During the bidding phase, contractors recognize the thoroughness of our documents, and as a result, their bids are tight. During the construction phase, change orders are generally few and small relative to overall project cost.

## SCOPE OF WORK

### Project Planning Phase

**Task 1 - Site Data Review**
OHM will perform a detailed desktop review of available background information associated with the Pittsfield Village neighborhood prior to initiating field investigations. Information that will be reviewed includes the following:

- City GIS Data
- City as-built drawings
- Cityworks data including water main breaks, sewer backups, street flooding, sewer cleaning/televising and other notable information that may influence project design
- Inventory of CCTV and manhole inspection data. It's understood that recent efforts reviewed and summarized most of this information within the Pittsfield Village limits. OHM will review the additional footage required beyond those limits and provide the City with a list of additional required pipe inspections. Where additional manhole inspections are required, OHM will incorporate that work into the Site Survey Task
- Sewer Lining Records
- Lead / Galvanized Lead Information
- Water meter installation status. Review status of meter installations within Pittsfield Village as part of the overall plan to eliminate the Pittsfield Village master meters. Coordinate with the City to determine how to serve multiple units with a single service connection.

Work with the Pittsfield Village Association to ensure the community understands how City utility billing will change with the removal of the master meters. Develop schedule and engagement process to complete the meter installation process and allow ample time for transition prior to master meter removal.

- NearMap Imagery
- Floodplain delineation along the Swift Run Drain between Packard and Norwood and along the Mallets Creek to the northwest of Pittsfield Village

**Task 2 - Site Survey**

OHM will perform a detailed Topographic Survey for the initial limit of proposed road and utility improvements.

The survey will provide full site control based on the City's official vertical datum of NAVD88 and horizontal datum of NAD83 State Plane Coordinates.

The proposed survey work includes approximately 14,200 feet of road corridor that will be surveyed in accordance with the Engineering Unit's topographic survey requirements. All topographic features on a project site will be located. This includes man-made and natural terrain features that the surveyor will encounter. Elevation data will be obtained, as needed, for sufficient project design, quantity computations and drainage studies. This will include gathering the following information:

- Surface features to 25' beyond the right-of-way
- Public and private utilities including detailed inventory with composition, size and inverts for sanitary manholes, storm manholes and catch basins, water main valve boxes and wells. Upstream and downstream storm/sanitary manholes collected beyond limits
- Driveways to 40 feet beyond the sidewalk
- Intersecting streets to 200 feet from the intersection
- Curb ramps to determine existing ADA compliance and assist with detailed design grading efforts for proposed sidewalk ramp improvements
- Ground Elevations
- Break lines for survey features
- Door sill / Finished floor elevations
- Retaining walls
- All Trees within the ROW(General tree type only, no species or health)
- Trees 6" or greater DBH outside the ROW (General tree type only, no species or health)
- Property corners and monumentation to develop right-of-way and parcel limits within the project limits.

**OHM is proposing more extensive topographic survey than required by the RFP. Due to the high potential for scope outside of the right-of-way or in common areas, we believe efficiency can be gained though a comprehensive up front survey effort.**

This detailed topographic survey will be provided along areas of known road and utility construction. OHM intends to also provide supplemental topographic survey with drone-based LIDAR Mapping (1' contours) beyond the limits described above, for those rear yard areas of Pittsfield Village that may be utilized for stormwater improvements. This will provide comprehensive survey data for the entire neighborhood, providing the information needed to consider stormwater improvements beyond the typical right-of-way limits.

OHM will perform a title search for the overall Pittsfield Village parcel. All recorded easements from this title search and from the City records will be incorporated into the base drawings. Additional title work beyond the single Pittsfield Village parcel, including for individual condominiums or for single-family parcels in the adjacent neighborhoods, has not been included.

OHM will prepare legal descriptions and exhibit drawings for recommended easement areas. We assume negotiation for easements will be led by the City staff, with support by OHM for back-up documents and technical guidance. For purposes of our current scope, we assume the preparation of up to six (6) permanent easements and six (6) temporary grading permits with applicable sketches and descriptions.

**Task 3 - Utility Coordination**

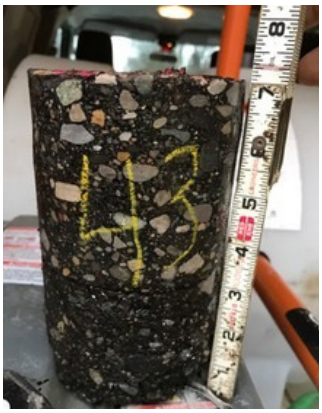
Using the Miss Dig design ticket process, OHM will contact known utility owners to obtain record drawings of their existing facilities within the project area and begin identifying conflicts with the proposed work.

OHM will coordinate with franchised and telecommunication utilities identified during the Miss Dig design ticket process and request information on the condition of their assets/facilities within the project limits and any planned capital improvements to replace, rehabilitate or expand them within the project limits.

OHM will provide plans at the various design stages to the franchised utility entities, providing on-going communication regarding conflicts and resolution.

**Task 4 - Geotechnical Study**

OHM will perform geotechnical soil borings and pavement cores for the proposed road, stormwater, sanitary sewer and water main construction. The geotechnical investigation will be completed by MTC, a sub-consultant to OHM.



It is estimated that a total of 26 additional borings will be required in addition to previous borings completed by the City.

Infiltration testing will be conducted at up to six (6) of the proposed borings to inform green streets design requirements. Given the more predominant clay soils of old East Ann Arbor area, it's anticipated that infiltration levels may fall below those required for typical infiltration designs.

Testing for pipe corrosivity parameters will be performed for up to five (5) soil samples along sections of proposed water main installation.

OHM will provide a geotechnical report through our sub-consultant MTC, outlining a summary of field services provided, soil boring logs, summary of existing conditions, and recommendations. These recommendations will be incorporated into the design and contract documents as applicable.

**Task 5 - Scheduling**

An initial schedule to complete this overall project within two construction seasons has been included in this proposal. As the initial project planning phase is completed, it's anticipated that the overall phasing required to construct and fund this project will become more refined. OHM will provide regular updated project schedules to the City's Project Manager that include modifications to the overall phasing or construction plan.

### Project Planning Phase Deliverables

- Topographic Survey
- CCTV Inspection List
- Preliminary Utility Conflict Matrix
- Geotechnical Report

## Preliminary Engineering Phase

Incorporating the data gathered during the planning phase, OHM will develop a series of improvement plans for the major elements of the project. These will be incorporated into a larger Preliminary Engineering Report, ensuring coordination of all project elements. The individual improvement plans will include:

**Task 1 - Road Improvement Plan**

Based on field evaluation, pavement boring/core results, proposed utility construction method/location and funding capacity, OHM will make recommendations for resurfacing or reconstruction. This process will be closely linked to the concurrent efforts to develop final utility scope.

Anticipated planning elements include:

1. Addressing intermittent curb overlay and subsequent grading challenges.
2. Sidewalk and road separation.
3. Addressing need for future EV charging infrastructure for on-street parking.
4. Potential neighborhood wide pavement markings including ADA parking and allocated space for trash/recycle bins in the roadway.

**Task 2 - Pedestrian/Mobility Improvements Plan**

OHM will perform a thorough review of the Pittsfield Village Project Area with a view towards the City's goals under the 2021 Moving Together Toward Vision Zero Comprehensive Transportation Plan. Goals from that Plan that apply to this project area include:

1. Address critical gaps in the sidewalk system
2. Enhance safety and visibility at uncontrolled crosswalks
3. Build out a safe, comfortable network of bike routes for people of all ages and abilities
4. Make intersections safer and easier to navigate for biking.
5. Update and complete the American with Disabilities Act (ADA) transition plan

Within the RFP, the City has specifically identified a sidewalk gap on Whitewood Street between Norwood Street and Packard Road that will be evaluated for inclusion in the project.

In addition, the implementation of an All Ages and Abilities (A3) bike corridor along Edgewood Drive and Pittsfield Boulevard will be evaluated. The long-term intent of this bike corridor is to extend from Platt Road to Washtenaw Avenue, but it's understood that the bike corridor will only be constructed within the limits of road improvements in the project.

**Task 3 - Stormwater Improvements Plan**

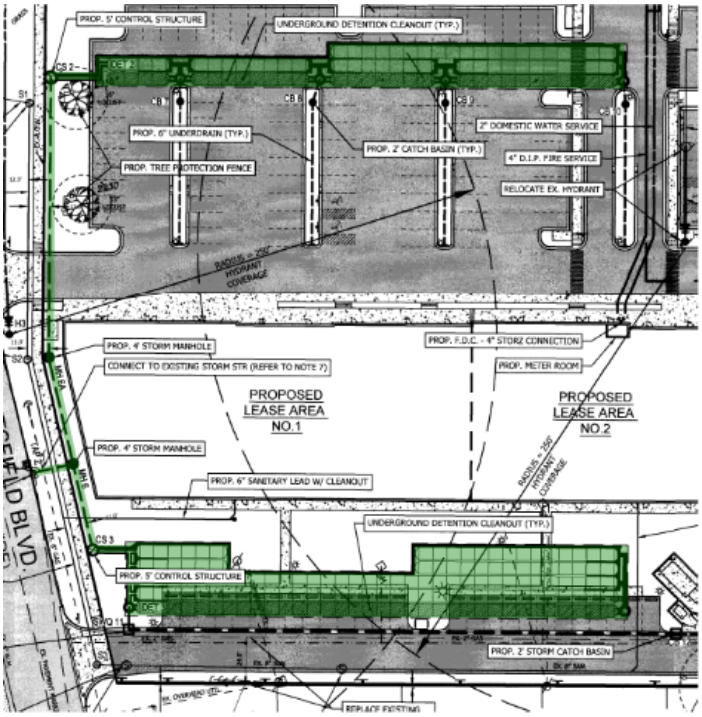
OHM will develop a comprehensive Stormwater Improvements Plan as part of the Preliminary Engineering Phase. This shall include:

*Subtask 1 – Review existing and current study results as follows:*

- Review 2023 Curb Drain Plan and confirm application based on the proposed comprehensive road improvements
- Review the 2015 Stormwater Model Calibration and Analysis Project and the recommended Parkwood Storage/ Conveyance alternatives. This prior analysis is specifically impacted by stormwater detention constructed in 2015 at 3500 Washtenaw. OHM will evaluate these alternatives as they relate to stormwater management opportunities under the scope of this work
- Review recommendations for replacement and rehabilitation of aging storm sewers and structures as identified in the 2023 Pittsfield Village Sanitary Sewer and Stormwater Evaluation Survey
- Review existing local street drainage along each road section identified for improvements
- Evaluate green infrastructure opportunities where possible to reduce surface flooding to the maximum extent practicable. The City's Green Streets Policy will be followed in areas with road reconstruction
- Coordinate with the City to determine final funding available for stormwater improvements
- Coordinate efforts with the Swift Run Watershed Study that is being performed by the Washtenaw County Water Resources Commissioner. It's anticipated that the southern section of Pittsfield Village will require improvements in coordination with the proposed work

*Subtask 2 – Field Data Confirmation*

- Identify all known undersized and inadequate assets within the project scope based on prior studies and condition information
- Confirm location of all storm inlets and outlets
- Identify all existing crock style inlets that require replacement
- Identify areas within the project area for potential stormwater management facilities




*Subtask 3 – Hydrologic & Hydraulic Modeling*

Upon completion of the initial data gathering, the OHM project team will prepare a refined hydraulic stormwater model of the project study area. This phase of the project will evaluate the functionality of the existing stormwater system, identify root causes of system deficiencies that will lead to improvement alternatives to mitigate flooding and improve water quality. Achieving this level of performance requires careful vetting and testing of the model to verify its accuracy and suitability. We propose to accomplish this with a set of tools that provide a series of checks on the accuracy of the model. These include:

- An existing conditions model will be developed/ refined starting with the existing City SWMM model. Updates from the ongoing Swift Run Watershed Study Refinement Project will be incorporated and OHM will review hydrology parameters, subcatchment delineations, existing sewers, and stage-storage curves.
- Field verified survey information of the network will be used to verify/refine as much of the existing pipe/node/channel/ storage/outfall network as possible. This will include

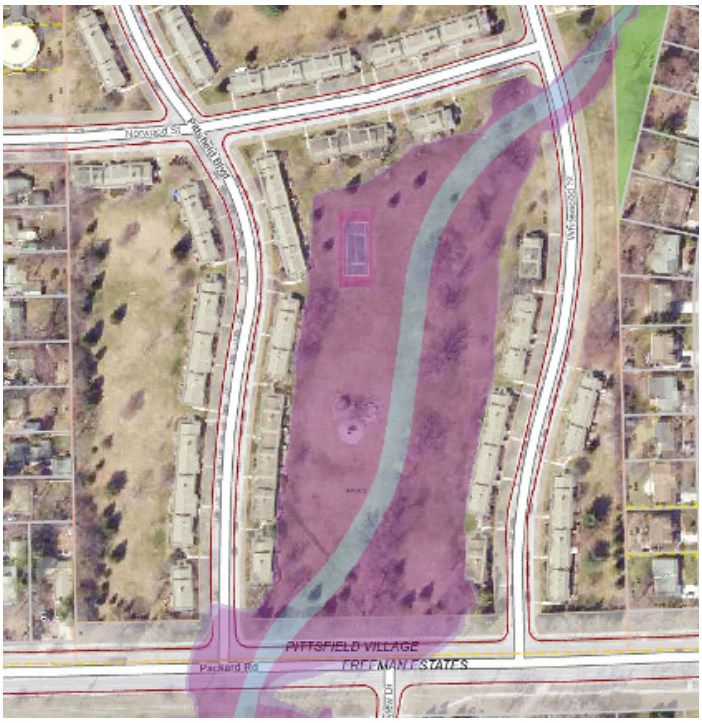
gathering pipe sizes, manhole inverts, pipe materials, pipe slopes, channel geometry, ground surface elevations and other relevant hydraulic parameters. Missing data collected as a result of the gap analysis will be used to populate the missing model parameters. The refined model will have a sufficient level of detail to evaluate the hydraulic grade line in the existing stormwater system, develop proposed alternatives, and calculate the resulting water surface elevation in the stormwater system study areas for a range of storm events (2-year, 10-year, and 100-year).

OHM will generate a series of plan view maps and profiles showing the stormwater system network, invert elevations, stormwater system slopes and pipe diameters/cross-sections. The refined subcatchment drainage areas will be displayed on the plan view maps. The maps and sewer profiles will be reviewed with the City to make sure critical system infrastructure is accurately represented.

Upon completing the analysis for existing conditions and proposed stormwater improvements with the project scope, a technical memo will be developed summarizing the model development process. This will detail the steps taken to update, calibrate and validate the City's SWMM model and summarize the additional data that was collected as part of this effort. The model performance will be discussed as well as any limitations identified through the model validation process. The existing conditions analysis will be discussed and compared to provide a basis to compare the subsequent alternatives analysis recommendations. The conclusion of this technical memorandum will mark the end of the model development phase of the project and serve as the starting point for the alternatives analysis.

*Subtask 4 - Stormwater Alternative Analysis and Final Plan*
The objective of this task is to incorporate area-wide stormwater needs, study results and current modeling efforts to develop innovative solutions to meet level of service objectives. These stormwater system improvements might include conveyance, storage, flow control, or green stormwater infrastructure.

The Project Team will define what we are trying to achieve and desired level of service criteria. Reduced surface flooding can be defined by a maximum depth of flooding for a specific storm condition if 100% elimination of surface flooding is not required or feasible. Layered parameters, such as allowing no surface flooding within portions of the Pittsfield Village neighborhood, with a small depth of flooding within non-critical areas can be defined. Ranking and prioritization criteria of the alternatives will include




a cost-benefit evaluation and expected improvements of system performance (flow and water quality).

A stormwater design workshop with the City, WCWRC and the OHM design team will be held to generate and vet the Pittsfield Village stormwater alternatives. These alternatives will be analyzed to consider initial, high-level cost curves, hydraulic modeling and expected water quality improvements.

OHM will summarize all stormwater planning efforts in the Stormwater Improvements Plan documenting the alternatives considered, their ranking, with final recommendations for the stormwater improvements throughout the project area.

**Task 4 - Sanitary Sewer Improvements Plan**
OHM will develop a comprehensive Sanitary Sewer Improvements Plan as part of the Preliminary Engineering Phase. This shall include:

- Review the original modeling effort to confirm the upsizing of 1,700 feet of existing 8-inch sanitary sewer to 12-inch sewer along Norwood Street from Bellwood Avenue to east of Whitewood Street near the Swift Run Drain. If other alternatives exist in lieu of upsizing the sewer, present those options to the City for consideration.
- Develop conceptual sanitary sewer alignment and determine if the pipe will be replaced along its existing alignment or along an alternative alignment. Review sewer bypass options for pipe replacement along with innovative

construction methods that could be viable based on pipe slope and location.

- Hold a meeting with City staff to review sewer maintenance concerns related to flat pipe slopes, poor manhole channels, and shallow sanitary sewer, along with innovative construction methods that could be viable based on pipe slope and location.
- Incorporate inspection data, capacity limitations and maintenance concerns into a comprehensive sanitary replacement and rehabilitation plan for the Pittsfield Village Neighborhood.

**Task 5 - Water System Improvements Plan**
OHM will prepare a water system improvements plan for the Pittsfield Village Neighborhood. The plan will focus on the three key improvements identified in the RFP.

- Replacement and upsizing of approximately 9,100 feet of existing asbestos cement water main.
- Eliminating three (3) master meters that serve the entire Pittsfield Village neighborhood. This master meter elimination must take place in coordination with the City's efforts to install individual water meters within each of the over 400 units in Pittsfield Village.
- Coordination of lead service line replacement on the homeowner's side of the curb stop valve.

The master meter elimination and lead service line replacement are closely linked. Typically, the City is verifying lead or galvanized service line materials on the homeowner's side during the installation of new water meters. It's understood that the City will complete the service line material verification and then lead service line replacements will be coordinated with the City's Public Works unit prior to the proposed water main replacement.

Most units within Pittsfield Village share a water service with an adjoining unit. Removing the three (3) master meters will require the City to develop a plan for addressing connected units since the overall condominium association will no longer be responsible for all water use. This will potentially require the installation of new service leads for all units, or meter math to be utilized to adjust bills for adjoining units. OHM will coordinate with the City's Public Works, Systems Planning and Customer Service Units to determine the best approach to eliminating the master meters.

### Preliminary Engineering Phase Deliverables

- Preliminary Engineering Report
  - Road Improvement Plan
  - Pedestrian/Mobility Plan
  - Stormwater Improvements Plan
  - Sanitary Sewer Improvements Plan
  - Water System Improvements Plan


## Public Engagement

Under this phase of work, OHM, in coordination with our subconsultant Charlie Fleetham of Project Innovations, will facilitate the development and implementation of a thorough public engagement process that the Ann Arbor community has come to expect with similar past projects. Specific work efforts would include the following:

**Task 1 - Prepare Public Engagement Strategy**
The Public Engagement Strategy will follow the City's guidelines for early, equitable and effective citizen participation in the planning of major projects. To effectively engage interested stakeholders and communicate progress throughout the project, the key components of the public engagement strategy should include:

- Situation Analysis – input from the City regarding key issues to be addressed
- Communication Objectives – clarify the City's objectives for dissemination of information and engagement of stakeholders
- Message Model – identify the messages that must be communicated to ensure stakeholder participation, introduction to the project team's competencies, and project merits

- Target Audience Lists – develop a list of stakeholders, City staff, media, and other influencers
- Engagement Timeline – timing to conduct meetings and provide interim and final reports
- Risk Analysis – identification of aggrieved or disenfranchised stakeholder groups which may require alternative communication strategies
- Media Strategy – establish a balanced strategy to disseminate information using appropriate electronic and print methods to reach target audiences
- Public Engagement Milestones – depict the interaction of the above-mentioned strategy

As noted in the RFP, the impacted residents within the project area represent a mix of demographic groups, some of which are considered more vulnerable populations such as low-income households. OHM's Public Engagement Team is prepared to ensure the plan is delivered with care and provides equitable engagement opportunities. To better understand the demographics of the area, we've considered both census and school demographic information during our preparation of the plan. Given it's location within the Project Area, the Pittsfield Elementary School population provides a good understanding of the resident demographics. A summary of the school population demographics can be found in the table below.

| Pittsfield Elementary School Key Demographics | |
|---|---|
| Economically Disadvantaged | 46.4% |
| English as a Second Language | 24.1% |
| Race/Ethnicity | |
| *Asian* | 6.8% |
| *African American* | 19.8% |
| *Hispanic/Latino* | 21.5% |
| *Two or More Races* | 11.0% |
| *White* | 40.9% |
| Students with Disabilities | 19.0% |

### Task 1 Deliverables

- Public Engagement Strategy Plan

**Task 2 - Engage the Public**

A Public Engagement Working Group will be established and engaged in the project. At a minimum, this Public Engagement Working Group will consist of the City Project Manager, OHM Project Manager, the OHM Public Engagement Facilitator, Charlie Fleetham from Project Innovations, and specific City staff to manage communication objectives for the project. We will support the City's communications staff in engaging the local media via news releases and media advisories to inform and educate the public on the project's objectives, opportunities to provide input, and project progress.

A project kickoff with the working group will be organized during the project planning phase of the project. Given the lengthy planning process involved in this project, it is anticipated that this working group will subsequently meet on three additional occasions.

Four (4) public meetings are anticipated for this project.

- One (1) meeting at the start of the project to introduce the anticipated scope to the public.
- One (1) meeting at the 60% Design Stage to review alternatives and communicate impacts to the neighborhood residents/rental managers/businesses, etc.
- Two (2) meeting to present the final design and communicate expected construction impacts and timing.

Public meetings will be conducted via in-person meetings based on City preference and the need for equitable outreach. Depending on location technology capabilities, a virtual live option will be made available, or recordings of the meetings will be made for posting online after the events.

To maximize attendance at the public meetings, we will conduct outreach to prospective stakeholders. Expected tasks include:

- Develop/confirm a stakeholder contact list and identify potential neighbor clusters.
- Conduct email/phone outreach to stakeholders (outreach process to be determined in initial strategy meeting).
- If needed, conduct a series of individual meetings with key stakeholders.

The tentative list of prospective stakeholders, (prior to going through the Community Engagement Toolkit with City staff) is extensive due to the project's construction/traffic impacts, and is anticipated to include:

- City of Ann Arbor Transportation Commission
- Washtenaw Area Apartment Association

- AAATA (The Ride)
- City of Ann Arbor Public Works Unit
- Pittsfield Village Condominium Association
- Other Neighborhood Associations
- Washtenaw County Water Resources Commissioner (WCWRC)
- Ann Arbor Public Schools (Pittsfield Elementary School)
- City of Ann Arbor Parks - Sylvan Park
- City of Ann Arbor Natural Area Preservation – Red Bud Natural Area

The initial list of key topics for outreach communication/ feedback includes:

- Traffic management during construction
- Reduction of on-street parking
- Stormwater Management and impacts on street flooding
- Sanitary improvements
- Interruption of water service during water main construction
- Location of pedestrian crosswalks and related safety measures
- School access during construction
- Solid waste collections during construction
- Deliveries during construction
- Disruption to events during construction

### Task 2 Deliverables

- Participate in Project Working Group meetings (4)
- Public meetings (3)
- Develop stakeholder contact list
- Mailing/Phone outreach as needed
- Conduct stakeholder interviews as needed
- Project completion meeting (1)

**Task 3 - Create and Distribute Public Engagement Materials**
Our team is prepared to coordinate with the City's Communications Office to create, distribute, and archive the materials suggested by the City, including but not limited to project overview/updates, emails, printed announcements, social media, submissions to newsletters, and website updates.

The following documents will be created, distributed, and archived as part of the public engagement process: public engagement plan, public meeting announcements and agendas, meeting summaries, supporting handouts. Prior to the start of project construction, OHM will summarize all outreach and engagement activities in a single comprehensive overview document.

### Task 3 Deliverables

- Announcements
- Informational Sheets
- Project Description Materials
- Meeting Summaries
- Meeting Recordings
- Submissions to newsletters, websites, media
- Updates to City Web Pages
- Public Engagement Overview Document

## Detailed Design Phase

Under this phase of work, OHM Advisors will proceed with detailed design and prepare the plan sets including title sheet, legend, notes, miscellaneous quantities, typical cross-sections, miscellaneous details, survey base plan, alignments, removals, construction sheets, drainage design, profiles, maintenance of traffic plans, grading, permanent signing, and pavement markings.

It is the intent that this effort will be divided into two phases with bid packages issued during the winter of 2024/2025 for construction during the 2025 construction season and in the winter of 2025/2026 for construction during the 2026 construction season.

The project design will be completed through the 30% level for the entire project limits prior to proceeding to 60% design documents for the individual phases. Please refer to the detailed schedule included in this proposal.

Specific work efforts would include the following:

**Task 1 - 30% Utility Design**

After utility scope confirmation during the preliminary design efforts associated with each utility, OHM will proceed with the following efforts:

- Meet with the City's Engineering, Systems Planning and Public Works staff to review the proposed utility alignments, construction methodology, and rehabilitation plans. It's anticipated that all proposed linear utilities will be constructed via open cut within the limits of the existing right-of-way.
- Develop 30% horizontal utility alignments for the entire project limits.
- Develop overall utility sequencing plan to minimize impacts to residents.
- Identify major utility conflicts and coordinate with franchise utility companies for potential relocation.
- Confirm utility permit requirements including EGLE PA 399 for water, EGLE Part 41 for sanitary and WCWRC Drain Use for stormwater.
- Provide preliminary cost estimates
- Identify required technical specifications
- Identify required utility easements or temporary grading permits

**Task 2 - 30% Road Rehabilitation/Reconstruction Design**

In coordination with the 30% Utility Design scope identified above, OHM will proceed with the following road improvement design scope:

- Meet with the City to review the anticipated scope of road improvement work along with the Geotechnical Report, present alternatives (if applicable), and make final design decisions prior to moving forward with the design phase.
- Determine layout of proposed sidewalk improvements including sidewalk gaps and locations where it may be desirable to separate the sidewalk from the back of curb.
- Develop layout for the proposed All Ages and Abilities bike corridor along Edgewood Drive and Pittsfield Boulevard.
- Coordinate road improvements with proposed 30% utility design.
- Prepare conceptual removal, construction, and profile sheets for road improvements consistent with the selected pavement cross sections. We assume for areas of road pavement resurfacing only (with existing curb), that profiles are not necessary. Road reconstruction areas would require new curb profiles.
- Provide layout for any mid-block pedestrian crossing improvements that are determined to be necessary. Identify any positive contrast streetlighting requirements at uncontrolled crossing locations such as across Pittsfield Boulevard at Richard Street.
- Identify potential locations with inadequate streetlighting, with specific consideration for the walking routes to Pittsfield Elementary school. Coordinate with the City to request additional streetlighting from DTE.
- Review topographic survey and determine if sidewalk ramps within the project limits are not in compliance with ADA, MDOT or City of Ann Arbor Standards requirements.
- Develop preliminary traffic control plans.
- Provide a preliminary construction cost estimate.
- Identify required technical specifications.
- Identify required temporary grading permits for road construction.

### Task 1 & Task 2 Deliverables

- 30% Design Drawings
- Technical Specification List
- 30% Construction Cost Estimate
- Schedule Update


**Task 3 - 60% Design Documents**
OHM will prepare detailed design drawings for the complete project improvements including water main, stormwater improvements, sanitary sewer improvements and road improvements. The documents will be prepared in conformance with City and EGLE Standards.

At the 60% stage, OHM will divide the project into multiple phases for construction over at least two consecutive construction seasons. The tasks below will be performed for each phase of the project in accordance with the overall project schedule:

- Soil Erosion and Sedimentation Control (SESC) measures will be incorporated in the plan set in accordance with Section 5.22 Storm Water Management and Soil Erosion of Chapter 55 – Unified Development Code of the City of Ann Arbor Code of Ordinances and Part 91 of Act No. 451 of the Public Acts of 1994.
- Maintenance of Traffic (for both Roadway and Pedestrian Traffic)
  - Prepare Maintenance of Traffic (MOT) Plans for each phase of work in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD) and City of Ann Arbor Standards.
  - Plans will include signage for maintaining pedestrian traffic throughout the project areas for the duration of the project.
  - Review phasing and closures with the City's Transportation Engineering Group and adjust MOT plans based on direction from the City.
  - Develop phasing and closure considerations to maintain adequate on-street parking for area residents. The limited availability of off-street parking will result in abnormal project phasing to ensure resident access is maintained. It's anticipated that the design will require partial width disturbance with one-way traffic to ensure parking needs are met.
- Pavement Marking Plans
  - Prepare Pavement Marking and Signage Plans in accordance with the Michigan Manual of Uniform Traffic Control Devices and City of Ann Arbor Standards, including replacement of pavement markings removed for project detour routes.
- Establish necessary pay items to perform the construction of the project following City standard pay items and developing special provisions as necessary.
- OHM will prepare necessary construction permit applications and required plans/attachments to relevant agencies required for the project. OHM will submit the permit applications on behalf of the City, unless instructed otherwise. The following permits are anticipated for this project:
  - EGLE Part 327 Water Withdrawal
  - EGLE Part 41 Wastewater Systems
  - EGLE PA 399 Water System
  - WCWRC Drain Use
  - MDOT (Traffic Control Signage Only)
  - Ann Arbor Right-of-Way
  - Ann Arbor Soil Erosion Control
- Refine utility plan and profile drawings for areas of new utility construction, in conformance with City, EGLE and WCWRC Standards.
- Provide City Standard Detail Sheets regarding public utility construction, as well as custom project details necessary.
- Prepare draft technical specifications for all utility and roadwork related items required as part of the proposed design.
- Prepare draft front end RFP documents in accordance with the City's standard Purchasing Unit templates.
- Prepare updated 60% cost estimate for the phased work included in the updated design documents.
- Submit 60% design plans and contract documents for City review.
- Update plans as necessary from preliminary comments/ feedback.

The construction drawing set is anticipated to include the following sheets:

1. Cover Sheet
2. Notes
3. Legend
4. Temporary Pedestrian Access Details
5. Standard Utility and Road Details
6. Typical Road Sections
7. Overall Plan
8. Maintenance of Traffic Plans
9. Staging Plans
10. Soil Erosion and Sediment Control Plans/Details
11. Removal Sheets
12. Water Main Plan and Profile Sheets
13. Storm Sewer Plan and Profiles Sheets
14. Sanitary Sewer Plan and Profile Sheets
15. Roadwork Plan and Profile Sheets

### Task 3 Deliverables

- 60% Design Drawings
- 60% Front End & Technical Specifications
- 60% Construction Cost Estimate
- Outside Agency Permit Applications
- Schedule Update

**Task 4 - 90% Construction Documents**

- Meet with City staff to review 60% design comments and incorporate revisions in the updated 90% documents.
- Prepare an updated 90% Engineer's Opinion of Construction Cost.
- Following submittal of the 90% plans and contract documents, OHM will conduct a final design review meeting with the key stakeholders within the City to review the final documents.

**Task 5 -100% Final Construction Documents**

- Revise 90% plans and specifications based on the review and comments from the City and review agencies.
- Prepare final Engineer's Opinion of Construction Cost.
- Submit final bid package to City Purchasing Unit for advertisement.

**Task 6 - Bid Assistance**

OHM will provide support to the City during the bidding process, including holding a pre-bid meeting with prospective contractors, addressing questions, and preparing addenda. Final bid review and scoring is assumed to be performed by City staff.

## Construction Phase Services

As noted in the RFP, optional construction phase services may be incorporated into the project scope. OHM is fully qualified and extremely experienced in providing construction services including engineering supervision, construction administration, and full-time site/project inspection related to constructed improvements.

The construction administration and site inspection services required by this RFP would include verifying that provided materials and work performed by the Contractor is in conformance with the project plans and specifications, as well as preparation of Inspector's Daily Reports (IDR's).

**Task 1 - Construction Administration**

- Coordinate with the City to ensure proper Contractor documentation for Contract Execution.
- Conduct a pre-construction meeting for each project phase with the awarded Contractor, City staff, and key stakeholders.

- Review and approve Contractor's shop drawing submittals. OHM will strive to provide responses to submittals within two weeks from the date of submittal.
- Receive, review, and respond to Contractors' Requests for Information (RFI's).
- Conduct progress meetings with the Contractor, subcontractors, and City representatives, as necessary, throughout the construction process. It is anticipated that these meetings will either be held on a monthly or bi-weekly basis, depending on the stage of the project and on-going construction activity. We currently anticipate up to 50 progress meetings.
- Receive and review Contractor pay applications and make recommendation to the City for payment.
- Provide progress update reports – OHM will provide monthly project updates for the City's use.
- Process change order requests submitted by the Contractor and provide the City with a response recommendation.
- Coordinate material testing through the City's existing contracted testing firms.
- Perform survey staking for the layout of the site improvements.

**Task 2 - Construction Inspection**

- Communicate daily with the City Project Manager, Engineer, or Civil Engineering Specialist regarding the progress of the work and any issues that may arise on the project.
- Communicate daily with the Contractor's superintendent or supervisor to coordinate inspection activities, logistics, and schedule, and to aide in proper inspection and oversight of the work.
- Communicate with the survey crew(s) to obtain cut sheets, and aide with proper interpretation of the construction staking and coordinating daily staking needs.
- Communicate with material testing personnel to assist in the proper sampling and testing of materials during the work.
- Communicate as needed with residents, businesses, and business owners to address any obstruction concerns.
- Coordinate with City Staff to inform them of any special parking needs throughout the projects as required.
- Coordinate as needed with the Water Treatment and City Public Works Units for shutdowns, water sampling and service interruptions.
- Help coordinate and resolve delivery conflicts to businesses and residents throughout the project.
- Coordinate with the City and Recycle Ann Arbor Staff for a trash and recycling removal plan during construction for business and residents.
- Attend progress/planning meetings related to the project.
- Verify that materials to be used as part of the work meet the project specifications.
- Monitor, document, and notify responsible party(s) of potentially hazardous site conditions relating to construction crew members, motorists and pedestrians which are observed.
- Coordinate the placement of road materials using the permit to place method.
- Generate IDR's to document work by the Contractor utilizing Appia software.
- Review the Contractor's equipment on-site to confirm it meets the intent of the project. Also document the type and amount of equipment that is on-site on the IDR.
- Inspect the Contractor's workmanship to verify it is consistent with the means and methods, tolerances, time requirements, temperature requirements and other aspects of the specifications, and document this on the IDR.
- Inspect and document on IDR that work is completed to the line and grade, as well as elevation shown on the project plans and per the specifications.
- Document daily on the IDR the contractor workforce and weather conditions.
- Document daily on IDR contractor activities, including explanation of any downtime, damage to the site or work, work activities by others including franchised utilities, City forces, adjacent property owners, or others that may be impacting work activities.
- Provide final measurements of the work as it's completed, calculate quantities, and document this on the IDR or in a field book as appropriate.
- Provide daily inspection of the temporary traffic control and maintenance of traffic throughout the construction influence area.
- Conduct periodic nighttime review and inspection of temporary traffic control and maintenance of traffic throughout the construction influence area.
- Provide certified storm water operators and conduct daily inspection of soil erosion and sedimentation control devices for proper maintenance and effectiveness.

- Perform and document wage rate interviews.
- Provide a field mark-up of the construction plans based on changes to the work or extra work performed during the project, to assist in preparation of as-built drawings.
- Develop the project punch-list and work with the contractor during completion of the punch-list, including follow-up inspections and documentation.
- Document changes to the work as the project is completed
- Document as-constructed notes based on plan changes or extra work performed
- Utilize marked-up plans, drawings, and notes to prepare CAD based as-built drawings per City requirements. As-built information will be submitted within one (1) month of project phase completion.

## Assumptions

The project will be funded with City funds. No grants, loans, or other outside sources of funding that will require administrative work by OHM will be utilized.

It is assumed that profiles are not necessary for utility abandonment and this work will be provided in plan-view only, unless otherwise required by EGLE.

Final bid review and scoring is assumed to be performed by City staff.

It is assumed that wetland delineation for this project will be limited to a small area (<2 acres) northwest of Parkwood Road near Malletts Creek.

It is assumed that streetlighting design will be coordinated with DTE by City staff.

Material testing for project construction has not been included. It's assumed this would be performed under the City's existing materials testing contracts.

It is assumed that there will be no contaminated soils within the influence of the project improvements.

It's assumed for the purposes of developing the optional construction services fee that the project will be constructed in two phases during the 2025 and 2026 construction seasons. The fee also assumes that two construction technicians will be utilized during each 8 month construction season, with one averaging 50 hours per week and the other averaging 45 hours per week.

Detailed tree survey identifying species and condition is not included in the scope of work.

The format of Contract Documents will follow the City's standard RFP format for the front-end portion of the contract document, and City format for detailed specifications for water main, earthwork, demolition, and restoration. Template forms and specifications shall be provided by the City for incorporation into the Contract Documents.

## RESOURCE SUMMARY TABLE - HOURS BY TASK / AREA

| | Project Management | Water Resources | Utility Design | Trans. / Road Design | Public Engagement | Survey | Construction | KEY STAFF |
|---|---|---|---|---|---|---|---|---|
| Project Management | 176 | 20 | 16 | 12 | 8 | 0 | 0 | Chris Elenbaas, George Tsakoff, Cresson Slotten |
| Project Planning Phase | 54 | 0 | 262 | 4 | 0 | 462 | 0 | Chris Elenbaas, Cresson Slotten, Thomas "TJ" Lentner, Adam Mitchell, Andrew Schripsema, Luke Heath |
| Public Engagement | 108 | 124 | 16 | 0 | 274 | 0 | 0 | Christine Spitzley, Charlie Fleetham, Mackenzie Johnson |
| Preliminary Engineering | 174 | 816 | 116 | 171 | 0 | 0 | 0 | Robert Czachorski, Valerie Novaes, Mackenzie Johnson |
| **DETAILED DESIGN PHASE** | | | | | | | | |
| 30% Utility Design | 244 | 48 | 694 | 0 | 0 | 0 | 0 | George Tsakoff, Chris Elenbaas, Cresson Slotten, Rich Hobgood, Thomas "TJ" Lentner, Brittney Bult, Brian Ardanowski, Adam Mitchell, Claire Martin |
| 30% Road Design | 86 | 0 | 272 | 252 | 0 | 0 | 0 | |
| 60% Design Documents | 186 | 8 | 967 | 260 | 8 | 24 | 0 | |
| 90% Construction Documents | 62 | 0 | 336 | 48 | 0 | 0 | 0 | |
| 100% Final Construction Documents | 34 | 0 | 196 | 28 | 0 | 0 | 0 | |
| Bid Assistance | 24 | 0 | 34 | 8 | 0 | 0 | 0 | |
| **Construction Phase Services (Optional)** | | | | | | | | |
| Construction Administration | 560 | 40 | 680 | 48 | 20 | 520 | 400 | Chris Elenbaas, Phil Maly, Fraser Payne |
| Construction Inspection | 120 | 0 | 0 | 0 | 0 | 0 | 6860 | Chris Elenbaas, Phil Maly, Fraser Payne, Two Construction Technicians (TBD) |

| | 2023 | | | | 2024 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | SEP | OCT | NOV | DEC | JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC |
| City Council Authorization | | | | | | | | | | | | | | | | |
| Executed Contract | | | | | | | | | | | | | | | | |
| **Project Planning Phase** | | | | | | | | | | | | | | | | |
| Site Data Review | | | | | | | | | | | | | | | | |
| Site Topographic Survey | | | | | | | | | | | | | | | | |
| Utility Coordination | | | | | | | | | | | | | | | | |
| Geotechnical Evaluation & Pavement Core Survey | | | | | | | | | | | | | | | | |
| Project Scheduling | | | | | | | | | | | | | | | | |
| **Public Engagement** | | | | | | | | | | | | | | | | |
| Prepare Public Engagement Strategy | | | | | | | | | | | | | | | | |
| Public Meetings | | | | | | | | | | | | | | | | |
| *Project Scope Introduction* | | | | | | | | | | | | | | | | |
| *60% Design Review* | | | | | | | | | | | | | | | | |
| *Construction Impacts and Timing - Phase 1* | | | | | | | | | | | | | | | | |
| *Construction Impacts and Timing - Phase 2* | | | | | | | | | | | | | | | | |
| Create & Distribute Public Engagement Materials | | | | | | | | | | | | | | | | |
| Document Final Public Engagement Results | | | | | | | | | | | | | | | | |
| **Preliminary Engineering** | | | | | | | | | | | | | | | | |
| Road Improvement Plan | | | | | | | | | | | | | | | | |
| Pedestrian/Mobility Improvements Plan | | | | | | | | | | | | | | | | |
| **Stormwater Improvements Plan** | | | | | | | | | | | | | | | | |
| *Review Existing Study Results* | | | | | | | | | | | | | | | | |
| *Field Data Confirmation* | | | | | | | | | | | | | | | | |
| *Hydrologic & Hydraulic Modeling* | | | | | | | | | | | | | | | | |
| *Alternative Analysis & Recommendations* | | | | | | | | | | | | | | | | |
| Sanitary Sewer Improvements Plan | | | | | | | | | | | | | | | | |
| Water System Improvements Plan | | | | | | | | | | | | | | | | |
| Draft Preliminary Engineering Report | | | | | | | | | | | | | | | | |
| Final Preliminary Engineering Report | | | | | | | | | | | | | | | | |
| **Detailed Design** | | | | | | | | | | | | | | | | |
| 30% Utility Design | | | | | | | | | | | | | | | | |
| 30% Road Design | | | | | | | | | | | | | | | | |
| **Phase 1 - Detailed Design 30% to Bidding** | | | | | | | | | | | | | | | | |
| 60% Design Documents | | | | | | | | | | | | | | | | |
| 90% Construction Documents | | | | | | | | | | | | | | | | |
| 100% Final Construction Documents | | | | | | | | | | | | | | | | |
| Bid Assistance | | | | | | | | | | | | | | | | |
| **Phase 1 - Construction** | | | | | | | | | | | | | | | | |
| **Phase 2 - Detailed Design 30% to Bidding** | | | | | | | | | | | | | | | | |
| 60% Design Documents | | | | | | | | | | | | | | | | |
| 90% Construction Documents | | | | | | | | | | | | | | | | |
| 100% Final Construction Documents | | | | | | | | | | | | | | | | |
| Bid Assistance | | | | | | | | | | | | | | | | |
| **Phase 2 - Construction** | | | | | | | | | | | | | | | | |

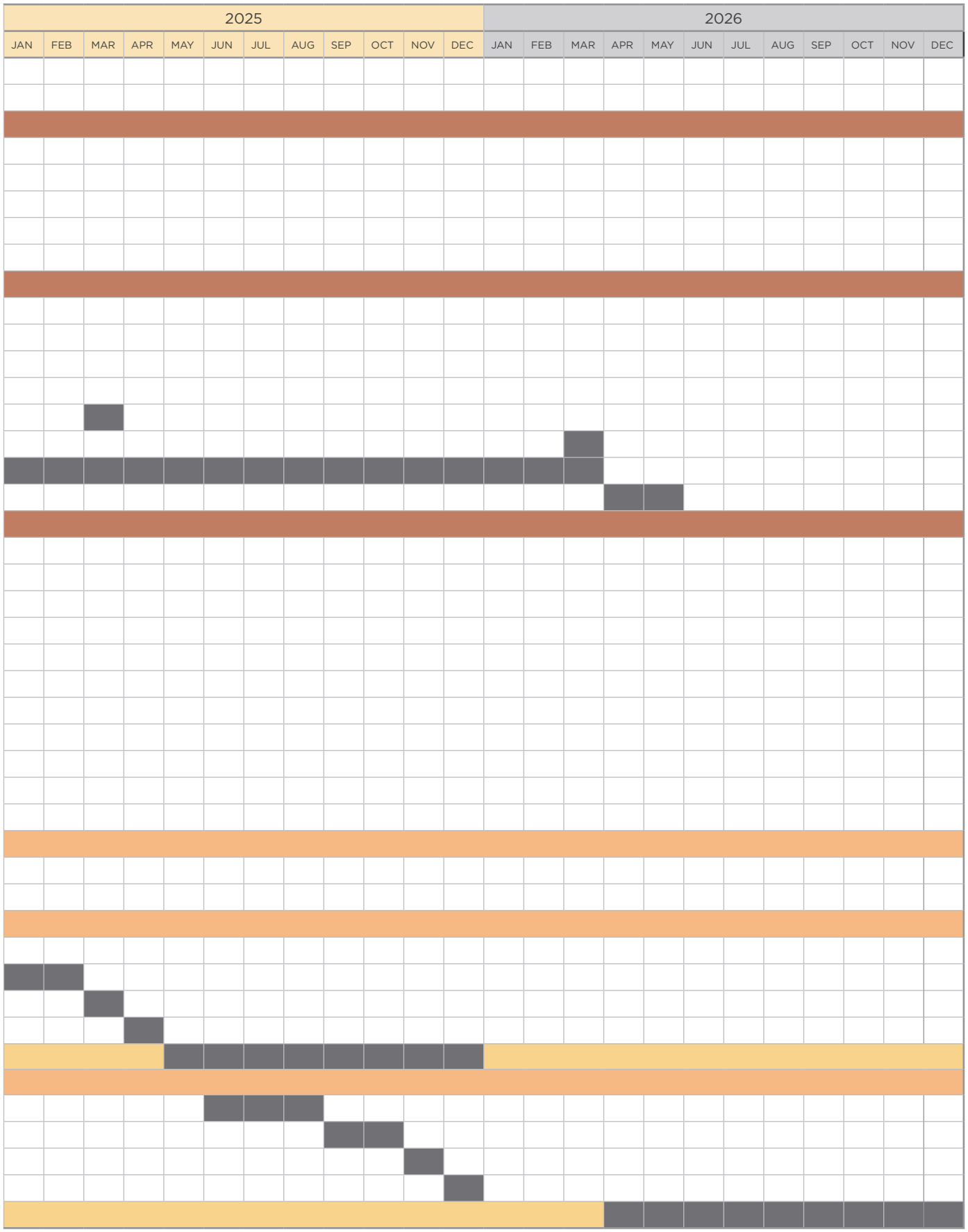

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**EXHIBIT B**
**COMPENSATION**

General

Contractor shall be paid for those Services performed pursuant to this Agreement inclusive of all reimbursable expenses (if applicable), in accordance with the terms and conditions herein. The Compensation Schedule below/attached states nature and amount of compensation the Contractor may charge the City:

(insert/Attach Negotiated Fee Arrangement)

OHM Advancing Communities®

Fee Proposal for

# PITTSFIELD VILLAGE IMPROVEMENTS PROJECT

City of Ann Arbor | RFP No. 23-34

**Proposal Due Date**
July 20, 2023, 2:00pm

ENGINEERING

| | **George Tsakoff** Authorized Negotiator / Project Mgr. | **Chris Elenbaas** Deputy Project Manager | **Cresson Slotten** QA/QC Manager | **Administrative Support** | **Robert Czachorski** Storm/Sanitary Modeling QA/QC | **Valerie Novaes** Green Infrastructure Engineer | **Mackenzie Johnson** Lead Storm/Sanitary Modeling Eng. | **Jacob Harrison** Water Resources Engineer | **GIS Technician** | **Richard Hobgood** Civil QA/QC | **Thomas "TJ" Lentner** Lead Utility Engineer | **Brittney Bult** Utility Engineer | **Stephanie Mcdannel** CAD / Designer | **Brian Ardanowski** Lead Road Engineer | **Adam Mitchell** Road Engineer | **Claire Martin** Non-Motorized Mobility Engineer | **Christine Spitzley** Water Resources & Env. Planner | **Charlie Fleetham (Project Innovations)** Public Engagement Facilitator (Sub) | **Andrew Schripsema** Survey Manager | **Luke Heath** Survey Crew Chief | **Survey (Two Man Crew)** Surveyor II / Surveyor III | **Survey (Drone Based Survey)** Surveyor III | **Phil Maly** Construction Manager | **Fraser Payne** Construction Engineer | **Construction Lead Technician** Technician III | **Construction Technician** Technician II | **MTC Subconsultant Fees** Geotech Subcontractor | **Hours Per Task** | **Fee Per Task** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hourly Rate** | $210 | $195 | $195 | $90 | $210 | $195 | $145 | $130 | $130 | $195 | $178 | $140 | $115 | $178 | $162 | $178 | $210 | $270 | $170 | $130 | $245 | $130 | $210 | $177 | $130 | $115 | | | |
| **Project Management** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Meetings | 20 | 52 | 104 | | 6 | 6 | 8 | | | | 8 | 8 | | 4 | 4 | 4 | 8 | | | | | | | | | | | 232 | $44,666 |
| **Project Planning Phase** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Site Data Review | | 2 | 2 | | | | | | | | 8 | 12 | 8 | | 2 | 2 | | | | | | | | | | | | 36 | $5,484 |
| Site Topographic Survey | 2 | 4 | 4 | | | | | | | | 8 | 8 | 96 | | | | | | 30 | 108 | 268 | 56 | | | | | | 584 | $107,644 |
| Utility Coordination | 2 | 2 | 2 | | | | | | | | 20 | 40 | 20 | | | | | | | | | | | | | | | 86 | $12,660 |
| Geotech. Evaluation & Pavement Core Survey | 2 | 6 | 2 | | | | | | | | 6 | 12 | 8 | | | | | | | | | | | | | | $30,600 | 36 | $36,248 |
| Project Scheduling | 6 | 10 | 4 | 4 | | | | | | | 8 | 8 | | | | | | | | | | | | | | | | 40 | $6,894 |
| **Public Engagement** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Prepare Public Engagement Strategy | 4 | 8 | 8 | 16 | 4 | | 24 | | | | 8 | 8 | | | | | 60 | 20 | | | | | | | | | | 160 | $31,469 |
| Public Meetings | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Project Scope Introduction* | 2 | 2 | 2 | | 1 | | 6 | | 8 | | | | | | | | 24 | 4 | | | | | | | | | | 49 | $9,921 |
| *60% Design Review* | 2 | 2 | 2 | | 1 | | 6 | | 8 | | | | | | | | 24 | 4 | | | | | | | | | | 49 | $9,921 |
| *Construction Impacts and Timing (2)* | 4 | 4 | 4 | | 2 | | 12 | | 16 | | | | | | | | 36 | 6 | | | | | | | | | | 84 | $16,542 |
| Create & Distribute Public Engagement Materials | 2 | 4 | 4 | 16 | | | 24 | | | | | | | | | | 48 | 20 | | | | | | | | | | 118 | $23,345 |
| Document Final Public Engagement Results | 2 | 2 | 2 | 16 | | | 12 | | | | | | | | | | 20 | 8 | | | | | | | | | | 62 | $11,142 |
| **Preliminary Engineering Phase** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Road Improvement Plan | 2 | 2 | 2 | | | | | | 8 | | | | | 16 | 28 | 28 | | | | | | | | | | | | 86 | $14,608 |
| Pedestrian/Mobility Improvements Plan | 2 | 2 | 2 | | | | | | 8 | | | | | 4 | 12 | 40 | | | | | | | | | | | | 70 | $12,016 |
| Stormwater Improvements Plan | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Review Existing Study Results* | 1 | 2 | 2 | | 8 | 8 | 60 | 16 | | | | | | | | | | | | | | | | | | | | 97 | $15,010 |
| *Field Data Confirmation* | | | | | 2 | 2 | 16 | 48 | | | | | | | | | | | | | | | | | | | | 68 | $9,370 |
| *Hydrologic & Hydraulic Modeling* | 1 | 2 | 2 | | 8 | 24 | 80 | 28 | 12 | | | | | | | | | | | | | | | | | | | 157 | $24,150 |
| *Alternative Analysis & Recommendations* | 2 | 8 | 8 | | 8 | 36 | 40 | 24 | 8 | 4 | | | 12 | | | | | | | | | | | | | | | 150 | $24,360 |
| Sanitary Sewer Improvements Plan | 4 | 12 | | | 16 | | 48 | 48 | 8 | | 2 | 24 | 8 | | | | | | | | | | | | | | | 170 | $25,416 |
| Water System Improvements Plan | 4 | 12 | | | | | 12 | | 8 | | 2 | 16 | 8 | | | | | | | | | | | | | | | 62 | $9,476 |
| Draft Preliminary Engineering Report | 4 | 40 | 24 | 4 | 6 | 6 | 96 | 80 | 24 | | 4 | 16 | | 6 | 12 | 16 | | | | | | | | | | | | 338 | $52,362 |
| Final Preliminary Engineering Report | 2 | 6 | 6 | 2 | 2 | 2 | 12 | | 4 | | 2 | 6 | | 1 | 6 | 2 | | | | | | | | | | | | 53 | $8,712 |
| QA/QC | 2 | 4 | 8 | | | | | | | 12 | | | | | | | | | | | | | | | | | | 26 | $5,100 |
| **Detailed Design Phase** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30% Utility Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Water Main* | 8 | 36 | 20 | | | | | | | | 80 | 120 | 40 | | | | | | | | | | | | | | | 304 | $48,240 |
| *Storm Sewer* | 8 | 60 | 36 | | | 24 | 8 | 8 | | | 60 | 120 | 80 | | | | | | | | | | | | | | | 404 | $63,960 |
| *Sanitary Sewer Improvements* | 8 | 32 | 8 | | | | 4 | 4 | | | 40 | 80 | 32 | | | | | | | | | | | | | | | 208 | $32,580 |
| *Engineer's Opinion of Construction Cost* | 2 | 4 | 2 | 2 | | | | | | 2 | 8 | 16 | | | | | | | | | | | | | | | | 36 | $5,824 |
| *QA/QC* | 4 | 4 | 10 | | | | | | | 16 | | | | | | | | | | | | | | | | | | 34 | $6,690 |
| 30% Road Design | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Road Reconstruction/Rehabilitation* | 6 | 12 | 8 | | | | | | | | 20 | | 80 | 24 | 80 | 20 | | | | | | | | | | | | 250 | $38,712 |
| *Intersections/Mid-Block Crossings* | 4 | 6 | 6 | | | | | | | | 8 | | 60 | 6 | 12 | 24 | | | | | | | | | | | | 126 | $18,788 |
| *Sidewalk & Ramps* | 4 | 6 | 6 | | | | | | | | 8 | | 60 | 6 | 12 | 32 | | | | | | | | | | | | 134 | $20,212 |
| *Bike Corridor* | 2 | 4 | 4 | | | | | | | | 2 | | 20 | 2 | 8 | 16 | | | | | | | | | | | | 58 | $9,136 |
| *Engineer's Opinion of Construction Cost* | 2 | 2 | 2 | 2 | | | | | | | 2 | | | 2 | 6 | 2 | | | | | | | | | | | | 20 | $3,420 |
| *QA/QC* | 2 | 2 | 6 | | | | | | | 12 | | | | | | | | | | | | | | | | | | 22 | $4,320 |
| 60% Design Documents | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| *Road and Utility Plan/Profiles* | 8 | 24 | 16 | | | | 8 | | | 4 | 48 | 80 | 120 | 16 | 40 | 24 | | | | | | | | | | | | 388 | $58,564 |
| *SESC* | 2 | 2 | 2 | | | | | | | | 12 | 24 | 40 | | | | | | | | | | | | | | | 82 | $11,296 |
| *MOT Plans* | 2 | 4 | 2 | | | | | | | | 8 | 16 | 54 | 8 | 40 | 24 | | | | | | | | | | | | 158 | $23,640 |
| *Pavement Marking Plans* | | 1 | 1 | | | | | | | | 2 | 8 | 16 | 2 | 8 | 2 | | | | | | | | | | | | 40 | $5,714 |

| | **George Tsakoff** Authorized Negotiator / Project Mgr. | **Chris Elenbaas** Deputy Project Manager | **Cresson Slotten** QA/QC Manager | **Administrative Support** | **Robert Czachorski** Storm/Sanitary Modeling QA/QC | **Valerie Novaes** Green Infrastructure Engineer | **Mackenzie Johnson** Lead Storm/Sanitary Modeling Eng. | **Jacob Harrison** Water Resources Engineer | **GIS Technician** | **Richard Hobgood** Civil QA/QC | **Thomas "TJ" Lentner** Lead Utility Engineer | **Brittney Bult** Utility Engineer | **Stephanie Mcdannel** CAD / Designer | **Brian Ardanowski** Lead Road Engineer | **Adam Mitchell** Road Engineer | **Claire Martin** Non-Motorized Mobility Engineer | **Christine Spitzley** Water Resources & Env. Planner | **Charlie Fleetham (Project Innovations)** Public Engagement Facilitator (Sub) | **Andrew Schripsema** Survey Manager | **Luke Heath** Survey Crew Chief | **Survey (Two Man Crew)** Surveyor II / Surveyor III | **Survey (Drone Based Survey)** Surveyor III | **Phil Maly** Construction Manager | **Fraser Payne** Construction Engineer | **Construction Lead Technician** Technician III | **Construction Technician** Technician II | **MTC Subconsultant Fees** Geotech Subcontractor | **Hours Per Task** | **Fee Per Task** |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Hourly Rate** | $210 | $195 | $195 | $90 | $210 | $195 | $145 | $130 | $130 | $195 | $178 | $140 | $115 | $178 | $162 | $178 | $210 | $270 | $170 | $130 | $245 | $130 | $210 | $177 | $130 | $115 | | | |
| *Front End Documents* | 2 | 16 | 8 | | | | | | | | 16 | 16 | | | | | | | | | | | | | | | | 58 | $10,188 |
| *Pay Items* | 2 | 8 | 8 | | | | | | | 2 | 36 | 48 | | 2 | 8 | 2 | | | | | | | | | | | | 116 | $19,066 |
| *Technical Specifications* | 4 | 12 | 8 | | | | | | | 6 | 80 | 80 | | 12 | 32 | 24 | | | | | | | | | | | | 258 | $42,942 |
| *Easement/Grading Permit Legals & Exhibits* | 2 | 6 | 6 | | | | | | | | 16 | | 20 | | | | 8 | | 24 | | | | | | | | | 82 | $13,828 |
| *Permitting* | 2 | 6 | 4 | | | | | | | 6 | 48 | 80 | 20 | | 8 | | | | | | | | | | | | | 174 | $26,880 |
| *Engineer's Opinion of Construction Cost* | 2 | 2 | 2 | 2 | | | | | | 1 | 8 | 12 | | 2 | 4 | 2 | | | | | | | | | | | | 37 | $6,039 |
| *QA/QC* | 4 | 4 | 12 | | | | | | | 40 | | | | | | | | | | | | | | | | | | 60 | $11,760 |
| 90% Construction Documents | 10 | 24 | 20 | 8 | | | | | | 16 | 80 | 120 | 120 | 8 | 32 | 8 | | | | | | | | | | | | 446 | $67,392 |
| 100% Final Construction Documents | 4 | 12 | 10 | 8 | | | | | | 16 | 40 | 60 | 80 | 4 | 16 | 8 | | | | | | | | | | | | 258 | $38,418 |
| Bid Assistance | 4 | 8 | 8 | 4 | | | | | | 2 | 12 | 12 | 8 | 2 | 4 | 2 | | | | | | | | | | | | 66 | $10,806 |
| **Construction Phase Services (Optional)** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Construction Administration | 80 | 200 | 200 | 80 | | | 40 | | | | 280 | 320 | 80 | | 24 | 24 | 12 | 8 | 40 | 160 | 320 | | 200 | 200 | | | | 2268 | $408,126 |
| Construction Inspection | | | | 120 | | | | | | | | | | | | | | | | | | | 260 | 520 | 3200 | 2880 | | 6980 | $904,651 |
| **Total Hours** | 250 | 685 | 609 | 284 | 64 | 108 | 516 | 256 | 112 | 139 | 990 | 1370 | 1090 | 127 | 398 | 306 | 240 | 70 | 94 | 268 | 588 | 56 | 460 | 720 | 3200 | 2880 | | | |
| **Total Cost** | $52,500 | $133,575 | $118,755 | $25,560 | $13,440 | $21,060 | $74,820 | $33,280 | $14,560 | $27,105 | $176,220 | $191,800 | $125,350 | $22,606 | $64,476 | $54,468 | $50,400 | $18,918 | $15,980 | $34,840 | $144,060 | $7,280 | $96,600 | $127,456 | $416,000 | $331,200 | | | |

| | |
|---|---|
| Total Design Phase Hours | 6,632 |
| Subtotal Design Phase Fee | $1,091,453 |
| Design Phase Subconsultant Fees | $49,518 |
| **Total Design Phase Fee** | **$1,140,971** |
| Optional Construction Phase Hours | 9,248 |
| **Optional Construction Phase Fee** | **$1,312,778*** |

**For Construction Phase Fee Only, Hourly Rates will increase annually based on the OHM Standard Rate Schedule. Total fee will not exceed Total Design Phase Fee and Optional Construction Phase Fee.*

**ATTACHMENT B**
**LEGAL STATUS OF OFFEROR**

(The Respondent shall fill out the provision and strike out the remaining ones.)

The Respondent is:

- A corporation organized and doing business under the laws of the state of Michigan, for whom George Tsakoff bearing the office title of Principal, whose signature is affixed to this proposal, is authorized to execute contracts on behalf of respondent.*

  *If not incorporated in Michigan, please attach the corporation's Certificate of Authority

- A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this proposal, is authorized to execute contract on behalf of the LLC.

- A partnership organized under the laws of the State of _____ and filed with the County of _____, whose members are (attach list including street and mailing address for each.)

- An individual, whose signature with address, is affixed to this RFP.

Respondent has examined the basic requirements of this RFP and its scope of services, including all Addendum (if applicable) and hereby agrees to offer the services as specified in the RFP.

George A. Tsakoff
Signature Date: 07/20/2023

(Print) Name George Tsakoff Title Principal

Firm: Orchard, Hiltz & McCliment, Inc. (dba OHM Advisors)

Address: 34000 Plymouth Road, Livonia, MI 48150

Contact Phone c (734) 495-9568 o (734) 466-4439 Fax (734) 522-6427

Email george.tsakoff@ohm-advisors.com

## ATTACHMENT C
## CITY OF ANN ARBOR DECLARATION OF COMPLIANCE

**Non-Discrimination Ordinance**

The "non discrimination by city contractors" provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

(a) To comply with the terms of the City of Ann Arbor's Non-Discrimination Ordinance and contract compliance administrative policy.

(b) To post the City of Ann Arbor's Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.

(c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.

(d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract.

Orchard, Hiltz & McCliment, Inc. (dba OHM Advisors)
Company Name

George A. Tsakoff 07/20/2023
Signature of Authorized Representative Date

George Tsakoff, Principal
Print Name and Title

34000 Plymouth Road, Livonia, MI 48150
Address, City, State, Zip

c (734) 495-9568
o (734) 466-4439 george.tsakoff@ohm-advisors.com
Phone/Email address

**Questions about the Notice or the City Administrative Policy, Please contact:**
Procurement Office of the City of Ann Arbor
(734) 794-6500

Revised 3/31/15 Rev. 0 NDO-2

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# ATTACHMENT D
# CITY OF ANN ARBOR
# LIVING WAGE ORDINANCE DECLARATION OF COMPLIANCE

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that an employer who is (a) a contractor providing services to or for the City for a value greater than $10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than $10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than $10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

*Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here* [___] *No. of employees__*

The Contractor or Grantee agrees:

(a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as $15.90/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than $17.73/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

***Check the applicable box below which applies to your workforce***

[___] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

[ X ] Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

(b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.

(c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.

(d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.

(e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Orchard, Hiltz & McCliment, Inc.
(dba OHM Advisors)
Company Name

34000 Plymouth Road
Street Address

George A. Tsakoff 07/20/2023
Signature of Authorized Representative Date

Livonia, MI 48150
City, State, Zip

George Tsakoff, Principal
Print Name and Title

c (734) 495-9568
o (734) 466-4439 george.tsakoff@ohm-advisors.com
Phone/Email address

City of Ann Arbor Procurement Office, 734/794-6500, procurement@a2gov.org Rev. 3/7/23

**ATTACHMENT E**

## VENDOR CONFLICT OF INTEREST DISCLOSURE FORM

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

| **Conflict of Interest Disclosure*** | |
|---|---|
| Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest. | ( ) Relationship to employee<br>_____<br>( ) Interest in vendor's company<br>( ) Other (please describe in box below) |
| OHM Advisors has no conflicts of interest. | |

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

| **I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:** | | |
|---|---|---|
| Orchard, Hiltz & McCliment, Inc.<br>(dba OHM Advisors) | | c (734) 495-9568<br>o (734) 466-4439 |
| **Vendor Name** | | **Vendor Phone Number** |
| George A. Tsakoff | 07/20/2023 | George Tsakoff, Principal |
| **Signature of Vendor Authorized Representative** | **Date** | **Printed Name of Vendor Authorized Representative** |

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org