Zephyr Foundation
Request for Qualifications for
ActivitySim Development and Enhancement

Milestone	Date
RFQ issued	August 6, 2026
Non-mandatory pre-submittal conference	August 19, 2026
Deadline for written questions	August 26, 2026, 5:00p PDT
Responses to questions / addenda issued	September 4, 2026
SOQ submittal deadline	September 18, 2026, 5:00p PDT
Interviews (if held)	September 24-25, 2026
Consultant notifications	October 2, 2026
Anticipated bench start date	October 23, 2026

I. Introduction

The Zephyr Foundation (Zephyr) is a nonprofit organization established to advance rigorous transportation and land use decision-making for the public good by advocating for and supporting improved travel analysis and facilitating its implementation. Zephyr promotes the development and adoption of open-source tools, best practices, and professional standards across the travel analysis community. More information about Zephyr can be found at www.zephyrtransport.org.

The Zephyr Foundation administers the ActivitySim project on behalf of a consortium of Metropolitan Planning Organizations (MPOs), Departments of Transportation (DOTs), and other transportation planning agencies. The Consortium provides technical direction and resources to support continued development of ActivitySim. All Consortium member agencies contribute to development priorities and benefit from improvements championed by fellow members. More information about the Consortium and its members can be found at https://zephyrtransport.org/activities/activitysim/.

Phases 1 through 11 of platform development have been completed. The Zephyr Foundation, on behalf of the ActivitySim Agency Partners, has issued this Request for Qualifications to establish a bench of contractors from whom the Zephyr Foundation can procure services for subsequent phases of platform development.

II. Purpose of this Request for Qualifications

The initial version of ActivitySim was released in 2019. This release was a fully functioning implementation of the original "Travel Model One" (TM1) developed by the Metropolitan Transportation Commission for use in the San Francisco Bay Area. The purpose of this effort is to establish a "bench" of vendors who will continue to develop and enhance the ActivitySim modeling system at the direction of the ActivitySim Agency Partners. In addition, the vendors will also do code review, release management, documentation, testing and user support. These efforts are supported through general task orders issued to bench contractors. It is anticipated that contracts with more than one vendor will be established, under which task orders will be issued to complete work program items. The following sections describe the overall project principles, project governance, recently completed work, and anticipated near-term and long-term ActivitySim development efforts.

III. Project Overview and Principles

The Agency consortium members ("Agency Partners") aspire to continue development of a common transportation modeling platform known as ActivitySim. The purpose of ActivitySim is to improve activity-based modeling practice and to reduce the overall costs of activity-based model development and maintenance by developing a shared software platform and knowledge base. Agency Partners benefit from shared bug fixes, model enhancements, and performance improvements identified and prioritized by their colleagues and implemented by agency staff and consultants.

Project Motivation

- Before ActivitySim, activity-based travel demand models were largely proprietary, agency-specific, or vendor-locked, making them expensive to build, hard to maintain, and difficult to compare or improve collectively.
- The founding premise of the ActivitySim project is that pooling resources across multiple agencies produces a better, more capable tool than any single agency could build or afford alone.

- The goal of the ActivitySim project is a practical, usable, performant platform that advances the state of the practice in activity-based modeling methods and software implementation.

Open-source as a core commitment

- ActivitySim is open-source
- Transparency of methods is a key goal (agencies can inspect exactly how travel behavior is modeled, supporting defensibility of results to stakeholders/the public).
- No single agency or vendor controls ActivitySim development
- Community can audit, extend, and reuse components rather than repeatedly procuring functionality that has already been implemented.

Agency-led

- The ActivitySim project is led by a consortium of agencies, which sets the project's direction and priorities.
- Consultants can propose and execute work, but strategic and prioritization decisions rest with participating agencies.
- Consultants engage with participating agencies through conversations and presentations in regular meetings, shared documents, and GitHub. The consortium is open to improved ways to facilitate agency input and feedback on the work.

Pooled Fund

- Development costs are pooled across agencies rather than borne individually, resulting in a more feature rich and thoroughly tested tool than any single agency’s budget could produce alone.
- Agencies may individually develop and contribute improvements to the ActivitySim project, which ideally have the potential to benefit the whole consortium.

Technical Principles

- Committed to activity-based modeling as the core underlying paradigm (versus trip-based approaches), due to the better representation of time-space constraints, and the interdependent nature of activity generation, scheduling, mode choice decisions.
- Grounded in established discrete choice / random utility theory, while remaining open to methodological evolution
- Preference for practical, deployable solutions
- Commitment to interoperability with other tools, such as population synthesizers, network assignment, land use and emissions models, through the specification and use of data standards.

Community & capacity-building

- Investment in documentation and training is a core value and an ongoing focus area.
- Consortium meetings, working groups, and open issue tracking are mechanisms for ongoing collaborative input.

Evolving

- The project mission and principles are stable, but scope, priorities, and technical approach have evolved over the life of the project, and are expected to continue to change during the course of the multi-year contracts resulting from this procurement.

IV. Governance and Administration

The Zephyr Foundation and the Agency Partners have committed to a governance structure and funding of a technical program to continue development of this common platform.

Consortium

- Multi-agency consortium model, with over 10 years of successful collaboration
- The Zephyr Foundation serves as the administrative/coordinating entity (facilitation, contracting, meeting management). Participating agencies include:

ARC	Atlanta Regional Commission	Atlanta, GA
CMAP	Chicago Metropolitan Agency for Planning	Chicago, IL
CTPS	Central Transportation Planning Staff	Boston, MA
MAG	Maricopa Association of Governments	Phoenix, AZ
Met Council	Metropolitan Council	St Paul / Minneapolis, MN
Metro	Oregon Metro	Portland, OR
MTC	Metropolitan Transportation Commission	San Francisco Bay Area, CA
MWCOG	Metropolitan Washington Council of Governments	Washington, DC
PSRC	Puget Sound Regional Council	Seattle, WA
SANDAG	San Diego Association of Governments	San Diego, CA
SEMCOG	Southeastern Michigan Council of Governments	Detroit, Mi
SFCTA	San Francisco County Transportation Authority	San Francisco, CA
Transport for NSW	Transport for New South Wales	Sydney, NSW
TransLink	TransLink	Vancouver, BC
Victorian DTP	Victorian Department of Transport and Planning	Melbourne, VIC

Decision-making process

- Project decision-making is based on a committee structure
    - Project management committee
        - Composed of agencies contributing to the pooled fund for the current fiscal year. This committee is the ultimate decision-making authority of the Consortium, in charge of all strategic decision-making, prioritization and pooled fund allocations.
    - Executive committee
        - Sets phase objectives and key results, manages administrative tasks (contracts, deliverable review, invoice review, etc.)
    - Product / Community committee
        - Develops feature requirements (in GitHub Issues) for the Engineering team to create and assign technical tasks, works with Engineering team to triage GitHub Issues
    - Engineering committee
        - Composed of consultants and agency staff, responsible for overseeing software development, including code creation, review, testing, and documentation, to ensure software that meets project objectives.
- Prioritization process
    - Semiannual development prioritization process led by agencies.
    - Ongoing issue and feature identification.
    - Dynamic priority list.

Procurement

- This Request for Qualifications will result in the selection of a consultant bench with whom Zephyr will establish contracts and task orders.
- Tasks will involve both development and maintenance efforts, based on agency-led and consultant-advised prioritization processes
- Task assignment to consultant involves a mix of competitive and non-competitive processes
- Zephyr will issue contracts and task orders to the consultant bench.
- The purpose of this RFQ is to establish the bench, not to award scopes of work.

GitHub

- The main repository for the ActivitySim activity-based model system and components can be found here: https://github.com/ActivitySim/activitysim

- A full list of consortium repositories including complementary tools (core platform, PopulationSim, estimation tools, example models, etc.) can be found here: https://github.com/activitysim
- Anyone can browse open issues, see how they're labeled/prioritized, and view discussion history in real time, rather than relying on a static planning document.
- Issues are the primary unit of work: proposed features, bugs, and larger discussion threads are all logged here, and most task-order scoping traces back to items surfaced this way.
- New issues and comments are open to the public, though only consortium members and maintainers make final prioritization/merge decisions.

Documentation

- Primary technical documentation (users' guide, developer's guide, model component reference): https://activitysim.github.io/activitysim/
- Documentation covers software architecture and usage rather than underlying behavioral theory; proposers are expected to bring relevant expertise in discrete choice modeling and activity-based travel demand theory.
- Documentation is actively maintained alongside the codebase but should be understood as a work in progress — proposers should expect some gaps, particularly around newer or more experimental components, and may be asked to contribute to documentation as part of future task orders.

Meeting notes

- Consortium and working-group meeting notes are also tracked in a dedicated repository, giving proposers visibility into past discussions and decisions: https://github.com/ActivitySim/meeting-notes

V. Recently Completed Work

Phases I through XI of ActivitySim development have been completed. The current ActivitySim implementation can be found at https://github.com/ActivitySim/activitysim. Additional ActivitySim documentation, issues, project wiki, and other information can be found at this GitHub repository.

ActivitySim is implemented in Python and current releases require Python 3.10 or later. The ActivitySim code base is governed by the BSD 3-Clause License. The current ActivitySim example models can be found at https://github.com/ActivitySim. Recently completed ActivitySim work includes development in a number of areas, such as:

Preprocessing & Annotation

- Preprocessing/annotation functionality was expanded and standardized across most model components.

Estimation Mode Modernization

- Estimation mode was updated to work with Larch v6 and made more stable. Consistency with Sharrow for ActivitySim spec files was established. New capabilities for modifying specifications without re-running ActivitySim were added, and estimation data bundle sizes were reduced.

Telecommute/work-from-home status model

- Added a dedicated telecommute status model, which explicitly identifies who is working-from-home on the simulation day.
- Developing new model components to simulate complex telecommuting behavior and explicitly represent how telecommuting affects other non-mandatory travel.

Dependency lock modernization (UV)

- Implemented a Python dependency-locking tool (UV) for ActivitySim to prevent installation and runtime failures from conflicting package versions, testing across Windows, macOS, and Linux and updating PyPI/Conda-forge releases.

Explicit error terms

- Implemented an "Explicit Error Term" choice simulation method as an alternative to Monte Carlo simulation for more consistent baseline-vs-build comparisons.
- Extensively investigated, tested and evaluated alternative random number generation methods to improve simulation runtime.

Maintenance

- Rationalized dependencies between PopulationSim and ActivitySim (enabling a single Python environment) with new continuous integration testing
- Developed a tool to improve runtime performance by profiling utility expressions in model specifications
- Added input data file checking procedures, a skim variable name validator, and implemented an option to skip (rather than crash on) households that fail during choice simulation

- Standardized naming conventions across model alternative files, and fixed non-reproducible results in a trip-scheduling model under multiprocessing
- Maintained two example models

Improved documentation and reporting

- Consolidated more than a hundred generic runtime errors into descriptive custom exceptions, fixed inconsistent trace-file identifiers, contributed to installation documentation, and cleaned up command-prompt logging output.
- Developed installation documentation.
- Developing a step-by-step application and analysis guide for using activity-based models to evaluate land use, telecommuting, and network change scenarios.

Automated Calibration

- Designing and implementing a partially automated model-calibration framework for several sub-models

VI. Current and Future Priorities

Identification and prioritization of development tasks is done on an on-going basis, guided both by long-term project goals as well as in response to issue needs that arise in the course of model development and applications.

In the period covered by this RFQ, priorities may include:

- Performance enhancements to reduce runtimes and memory requirements
- Making calibration and validation easier and robust
- Simplifying the configuration and running of ActivitySim
- Improving ability to diagnose problems and debug model runs
- Ensuring complete and up-to-date documentation

Proposers can check GitHub issues/projects for current, granular status — this document describes categories and potential directions, not a committed task list. The items identified represent opportunities at different stages of consideration and planning, from exploratory concepts to work that has been prioritized for near-term delivery.

Performance

- Implement multithreading to work in coordination with current multiprocessing capabilities, in order to better leverage additional computing resources and reduce runtimes
- Alternatives to Pandas for Performance. The current version of ActivitySim relies heavily on pandas for data manipulation and vectorized operation. While proven to be a viable and reliable approach, Pandas is compute-resource intensive (memory and speed) and makes ActivitySim implementation challenging for some agency partners.
- Testing Regime. ActivitySim's current testing regime relies heavily on end-to-end integration tests which provide meaningful coverage, but are slow and brittle. The consortium would like to develop a testing regime that balances faster, more targeted unit tests, and also maintain integration tests that catch real-world regressions.

Calibration & Validation

- Automated Calibration. Expand coverage of automated calibration to additional model components and more calibration type examples (such as improved distanced term calibration methods). Explore alternative calibration approaches such as SPSA (Simultaneous Perturbation Stochastic Approximation) which facilitates calibration of multiple model components simultaneously. Empirically investigate the efficacy of different calibration strategies.

Model Capabilities

- Telecommuting. Complete implementation of explicit telecommute model design.
- Ensure time-space constraint adherence. Ensure feasibility in time and space of predicted activities and travel, reflective of activity durations and travel times
- Improve representation of multiple work and / or work-related activities and locations
- Non-resident travel. Consider adoption of example models implemented in ActivitySim that capture activities and travel not represented in the core resident travel models, such as commercial vehicle travel and non-resident visitor travel.
- Network Assignment. Consider adoption or development of an open-source multimodal network assignment tool that is integrated with and optimized for use with ActivitySim.

Usability

- Continued enhancement of debugging/diagnostic tools, runtime reporting, utility expression profiling, and runtime and memory usage performance profiling
- Standardized visualization tooling to support model output QA/QC and calibration/validation review.

- Enhanced Integration with downstream tools including open source static and dynamic traffic assignment packages, emissions models, and other tools.
- Data Model. Document use cases and consider development of ActivitySim data model
- User Interface. Development of a user interface to allow users to easily inspect and configure individual model components and overall process flow

VII. Schedule and Contract Value

The schedule for completing work will be established for each individual task order. The initial length of this contract is for approximately two years. The Zephyr Foundation and the Agency Partners expect work to commence promptly upon contract execution. At the Zephyr Foundation and the Agency Partners' sole option, the contract may be extended for three (3) additional years for work related to building a consolidated travel model software platform. The approximately 2 year period is intended to align any contract amendments with the Zephyr Foundation's fiscal calendar.

Due to the task order based nature of this contract, it is not possible to assert a total value for each individual vendor contract. However, The Agency Partners expect to provide over US$425,000 per year to support the overall effort. Over the course of five years, the total value expended by agency partners is anticipated to be over US$2,000,000. The budget and authorized tasks will depend upon on-going funding from Agency Partners through each agency's annual or biannual budgeting process. The consortium of Agency Partners may also grow to include more agencies. As Agency Partners are added, the consortium may adjust the scope of work or funding levels to adequately address new demands.

VIII. Methodology for Responding to the RFQ

Prospective respondents should prepare a methodology for completing work order items as they are defined by the Agency Partners. Task orders will be issued against awarded contracts on a rolling basis throughout the contract period.

Proposal Structure

Respondents must follow the prescribed format or they shall be deemed nonresponsive. Adherence to the proposal format by all respondents will ensure a fair evaluation and one which can evaluate each response with regard to the needs of the Zephyr Foundation. Proposals should be prepared as described below.

<u>Cover:</u>

The cover shall contain the name and location (city, state, country) of the primary submitting agency and the name and telephone number of the Project Manager bearing primary responsibility for the project.

Introductory Letter:

This letter shall contain the name and address of the primary submitting agency and any proposed subcontractors, as well as the name, address, telephone number, and email address of the Project Manager. The letter must be signed by an officer authorized to bind the respondent contractually as required by this RFQ. The letter shall indicate whether there are any conflicts of interest, actual or apparent, that would limit the proposer's ability to provide the requested services and describe the plan for mitigating such conflicts. The letter shall indicate that the proposal is a firm offer to enter into a contract to perform work related to this RFQ for a period of one hundred twenty (120) days from the due date for proposals.

Table of Contents:

List each chapter and appendix.

Chapter 1: Overview and Summary

This section should convey the proposer's understanding of the nature of the work and the general approach to be taken, and identify any specific considerations. It should include, but not limited to, the following:

- A discussion of the project's purpose
- Project management strategies
- Development workflow
- Code review workflow
- Testing and quality assurance
- Documentation
- Coordination with Agency Partners
- If applicable, managing conflicts between client-specific work and common-platform work.

Chapter 1 should be no longer than five (5) pages.

Chapter 2: Qualifications of the Firms and Personnel

This section shall provide the professional credentials and experience of the firm and any subcontractors, and the key personnel of all firms proposed for this effort. The absence of such specific information shall be considered as nonresponsive. A maximum of ten (10) pages is allowed for Chapter 2. Standard personnel resumes shall be included in an appendix to the proposal, and do not count towards the 10-page requirement.

Amplification of personnel credentials specific to this RFQ is required in this section. Information shall be provided showing:

- Experience and familiarity with travel demand modeling in MPOs;
- Experience and familiarity with the advanced modeling issues confronting the MPO community, including knowledge of the modeling process.
- Demonstrated experience developing or maintaining open-source software.
- Experience with GitHub pull requests, issue tracking, milestones, code review, and release notes.
- Experience with Python scientific computing stack, including pandas, NumPy, Xarray, Numba, and/or similar tools.
- Experience with automated testing, continuous integration, regression testing, and reproducible environments.

The work shall be performed under the technical direction of a Project Manager identified in the proposal. It is expected that the Project Manager will be available for the full contract period and will have major involvement in the pursuit of the project objectives.

As timely completion of this project is critical, the respondent shall stipulate its ability to meet the deadlines presented herein.

Chapter 3: References

The proposed Contractor and any Subcontractors shall provide a listing, as well as references, of similar work completed or in progress for other clients. Preferred references will be from work conducted within the last three years. References will include complete contact information (name, title, organization, address, email address, and telephone number). References should include work in which key personnel proposed to the Zephyr Foundation for this project have served. A maximum of five (5) pages is allowed for Chapter 3.

Chapter 4: Rates and Compensation

Respondents shall submit an hourly billing rate schedule for all labor categories anticipated to perform work under this engagement. Rates shall separately identify direct labor, fringe benefits, overhead, general and administrative costs, and profit/fee, reflective of their current federally-approved (or, if unavailable, self-certified) indirect cost rates, including: Fringe benefit rate, Overhead rate, General and Administrative (G&A) rate, and Fee/profit percentage. If the respondent wishes to include subconsultants, the Respondent shall submit rate schedules for each subconsultant firm in the same format required of the prime. Rate escalation over the for the initial contract term and for any optional renewal periods will be established by the ActivitySim Project Management Committee prior to the issuance of any contract.

No work or compensation is guaranteed under this RFQ. Selected firms will be placed on a Consultant Bench and may be invited to submit a scope, schedule and cost proposals in response to specific Task Orders issued during the contract term. Travel and other direct costs are not allowable. Invoicing procedures will be established by the ActivitySim Project Management Committee prior to the issuance of any contract

IX. Disadvantaged Business Enterprise Participation

It is the policy of the Agency Partners that Disadvantaged Business Enterprises (DBEs), as defined in Chapter 49, Part 26 of the United States Federal Government's Code of Federal Regulations, have an opportunity to participate, either as contractors or as subcontractors, in the performance of contracts to the extent practical and consistent with the efficient performance of the contract. The Zephyr Foundation is proposing a DBE goal of 5% across all task orders issued to accepted proposers.

Consistent with prior ActivitySim development contracts, The Zephyr Foundation is adopting the Atlanta Regional Commission's DBE requirements for this contract, which can be found here: https://procurement.atlantaregional.org/disadvantaged-business-enterprise/. The Zephyr Foundation will accept a DBE certification from an entity that receives US Department of Transportation funds if the certification specifies compliance under the Code of Federal Regulations Title 49, Section 26.

X. Method of Proposal Evaluation and Selection

The Agency Partners and Zephyr Foundation project manager will evaluate proposals. The Agency Partners may hold, at the Zephyr Foundation's discretion, a pre-selection meeting with the top ranked respondents. The final recommendation for selection may be made based upon interviews and/or a best and final offer submitted by the respondents, if required by the Agency Partners. The Zephyr Foundation reserves the right not to convene oral interviews or discussions, and to make the award on the basis of initial proposals. Accordingly, each initial proposal should be submitted on the most favorable terms from a price and technical standpoint.

In evaluating the proposals, the following factors will be considered, with points awarded up to the maximum shown:

FACTOR	POINTS
1. Qualifications of firm and key personnel.	40
2. Written communication skills based on proposal.	20

3. Approach to completing the project, including but not limited to: understanding of the needs, requirements, and timeline; proposed approach to tasks, ability to anticipate and respond to potential challenges, strategy for managing resources, and approach to quality control and quality assurances.	30
4. Cost effectiveness, including hourly rates, basis for escalation over term of contracts, reasonableness, and appropriateness of preliminary task budget.	10
Maximum Total Points	100

This RFQ does not commit the Zephyr Foundation to award a contract or to pay any costs incurred in the preparation of a proposal in response to the RFQ. The Zephyr Foundation reserves the right to accept or reject all proposals submitted, waive minor irregularities, request additional information, and negotiate with any or all proposers.

XI. Notification and Additional Information

Pre-briefing conference calls will be held at two times, to accommodate users across a broad range of time zones:

- Wednesday, August 19, 2026 10:00a PDT
- Wednesday, August 19, 2026 3:00p PDT

Proposers should notify admin@zephyrtransport.org by 5:00 pm PDT on Tuesday, August 18, 2026 if they are interested in participating in this call. Teleconference information will be provided to all firms and individuals who have provided notification of their interest to bid.

Questions

All questions and contact regarding the RFQ must be directed to the Zephyr Foundation project manager, and not to the Agency Partners. Questions may be sent to admin@zephyrtransport.org until August 26, 2026, 5:00p PDT. All questions received and responses by the Zephyr Foundation will be posted on the Zephyr website ActivitySim page (https://zephyrtransport.org/activities/activitysim/).

Submission Date and Contact

Statements of Qualification must be received no later than 5:00 pm PDT on Friday, September 18, 2026.

This deadline for receiving proposals is rigid, and extensions will not be granted. In order to be considered, proposals must be received not later than the deadline shown. Without exception,

all proposals arriving after the deadline shown will be rejected. Proposers may withdraw their proposals at any time.

Statements of Qualification must be sent via email to the Zephyr Foundation project manager at admin@zephyrtransport.org. Confirmation of receipt will be provided.