**PhD Qualifying Exam Procedure**

Transportation Systems Analysis and Planning (TRN)

Department of Civil and Environmental Engineering

Northwestern University

1. Introduction. The Qualifying Exam is one of the major steps necessary for a PhD student to advance to PhD Candidacy, which is one of TGS’s required milestones to earn the PhD degree. Admission to the PhD program does not guarantee advancement to Candidacy. In addition to passing the Qualifying Exam, advancement to Candidacy requires: (1) a 3.5 GPA, (2) passing the English Language Proficiency requirement (if applicable), and (3) identifying a research advisor to supervise PhD study and provide financial support. For other details about advancement to Candidacy, consult the PhD Handbook available on the CEE webpage.
2. Timeline. TRN PhD students are expected to take the qualifying Exam towards the end of their first Spring Quarter, with exceptions granted in rare situations, e.g., to students starting the program in the Winter or Spring Quarters. The vast majority of PhD students will be taking the Qualifying Exam by the end of their third academic quarter in the program. The date of the Qualifying Exam will be confirmed approximately one month in advance of the exam, with instructions regarding the content and format sent to TRN PhD students at least two weeks before the exam.
3. Committee. At least three TGS faculty members will comprise the committee – one of whom will serve as the chair of the committee. The TRN Area Coordinator is responsible for constituting exam committees, including naming a chair.
4. Exam Content and Format.[[1]](#footnote-1) Individual TRN PhD students will meet with the exam committee and make an oral presentation outlining plans to address one or more open-ended, large-scale, complex, and contemporary transportation systems analysis, planning, design or operations problems. Students will be expected to describe a conceptual approach to the problem, theories they might rely upon to develop models or methods to conduct the proposed analysis, data they might use/collect to support their approach along with possible, implementation issues. The intent is to give students an opportunity to consider frameworks from transportation areas of their choice: operations, traffic/control, demand/behavior, policy/planning, economics or logistics, while building on and integrating material from coursework, literature, case studies, as well as expertise in optimization, statistics, simulation, computer science/AI or . Students will be expected to answer specific questions related to their plans, as well as broader questions from synergistic areas of study in transportation. Problem statements will typically be released to TRN PhD students 24-48 hours in advance of the exam.
5. Exam Outcomes. (1) “Pass” means the student has satisfied the Qualifying Exam requirement and no further action is needed. (2) “Fail” means the student has not satisfied the Qualifying Exam requirement and may not be allowed to retake the exam.

1. The TRN faculty reserve the right to offer Qualifying Exams in different formats. Therefore, students should be familiar with the general guidelines appearing in the in CEE PhD Student Handbook. [↑](#footnote-ref-1)