Indianapolis Regional Transportation Improvement Program
Project Scoping and Cost Estimating Instructions
August 2019

IRTIP Project Scoping and Cost Estimating Overview

One of the primary responsibilities of the Indianapolis MPO is to administer the program of federal transportation funds used by agencies within the Indianapolis Metropolitan Planning Area (MPA). A competitive selection process is conducted for the following programs: Congestion Mitigation and Air Quality (CMAQ), Highway Safety Improvement Program (HSIP), Surface Transportation Block Grant (STBG), and the Transportation Alternatives Program (TAP). Recommended projects are presented to the Indianapolis Regional Transportation Council (IRTC) for approval as part of the Indianapolis Regional Transportation Improvement Program (IRTIP).

The IRTIP includes all federally funded transportation programs and projects identified in the Indianapolis MPA using available federal dollars within a four-year period, as well as a list of illustrative projects outside the four-years of the IRTIP. It is amended periodically as necessary to reflect changing conditions and project priorities. In addition, the IRTIP includes locally funded projects that are considered regionally significant or that are intended to be used as local match to a future federally funded project.

The IRTIP is short-term in nature and is intended primarily as an implementation tool. Member jurisdictions that are in good standing are eligible to submit funding applications for a wide variety of surface transportation related activities, ranging from traditional road projects to bicycle and pedestrian facilities. There is a public review and comment period for the IRTIP to allow the public the opportunity to have their comments considered in the development of the IRTIP.

Developing and maintaining accurate cost estimates, meeting planned schedules, and avoiding overruns during construction have always been important for maintaining the regional transportation program of the IRTIP. Getting these elements right has become essential during recent years, however, as INDOT has adjusted their policies. The MPO and the region are now operating under a “use it or lose it” policy, meaning the MPO can no longer “carry over” balances in federal funding programs from year to year. Project overruns or schedule slippage by one local agency can impact the funding availability in the region. Project underruns can result in valuable federal funds that go unused and possibly returned to INDOT.

The MPO is continually seeking ways to improve the effectiveness of the IRTIP process to ensure that the maximum federal funds are available for member agencies, and to see that these funds are expended in the most effective and efficient manner. One of the tools developed to help accomplish this is the Project Scoping and Cost Estimating Form, which will be requested in the future for all projects proposed for inclusion in the IRTIP.

The Project Scoping and Cost Estimating Form is intended as a companion to the information currently provided in MiTIP, the software used by local public agencies to submit proposed projects for the IRTIP. Submittal requirements of MiTIP and scoring of projects by the MPO remain unchanged. The form serves

as a checklist for project scoping to help the local agency define project components, estimate costs, and identify risks to be addressed during development. For the most part, the information should be readily available if a project is at the appropriate stage of definition for inclusion in the IRTIP. When included with an IRTIP submittal, the form helps the MPO determine how well the sponsoring agency understands the scope and cost of the proposed project, and it helps the MPO identify risks that may affect the cost or schedule of the project and the IRTIP as a whole.

Form Structure and General Instructions for Completion

The Project Scoping and Cost Estimating Form is intended to capture all significant elements that affect the cost and schedule for project implementation. A combination of check boxes and comment lines are used to enter information. The check boxes expedite completion of the form and allow information to be compiled and summarized from multiple projects. The comment lines provide flexibility for describing project features and assumptions.

When completing a project application in MiTIP, a Project Scoping and Cost Estimating Form, the local public agency's project cost estimate, and the results of the MPO planning-level cost estimating tool should be uploaded with the application

General guidelines are provided below for completing each section of the Project Scoping and Cost Estimating Form.

<u>Section 1: General Project Information</u>
This information should match the entries for the project in MiTIP.

Only one box should be checked for project type, reflecting the largest component of the project. For instance, a new roadway with bridges, roundabouts, and a parallel multi-use trail would be shown as a "new terrain roadway." The other components of the project are captured in the next section (Project Description).

<u>Section 2: Project Description</u>
The intent is to provide a high-level description of the project. More detailed information about specific project components is provided in subsequent sections. For instance, project limits for a new roadway might be from 56th Street to 62nd Street. Major features might be two bridges, three roundabouts, and a parallel multi-use trail. The typical section might be described as a two-lane roadway with curb and gutter. Bicycle/Pedestrian Facilities might be a 5-foot sidewalk on one side and an 8-foot multi-use path on the other.

The project description should include a brief statement of the need and purpose of the project. This is a statement of the existing problem that will be addressed by the project and how the project will help to solve or alleviate the problem. Checkboxes are also included to identify completed items that are often used for project scoping.

It is assumed that a map of the proposed project and project vicinity has previously been uploaded to MiTIP. If not, or if a more detailed map is available, one should be provided as an attachment to the form. It is particularly important to upload a map depicting the proposed alignment for any new road and bike facilities.

Section 3: Cost Estimate Data and Assumptions

Unit price based cost estimates are required for project applications submitted to the MPO. The initial submittal may be based on preliminary estimates, to be refined during project design. The "unit cost sources" entry is used to identify the data sources that were used for unit cost information. In most cases, unit cost sources are INDOT averages, comparable costs from local bids for similar projects, or industry estimating guides (i.e. Means Cost Data). If more than one source is used, list them all. If unit costs were adjusted based on previous experience or local conditions, please explain the adjustments.

At the project scoping phase, the quantities of some items that will be included in the project might be difficult to estimate. These items might be expressed as cost allowances at this phase of project development. Describe allowances used in the cost estimate and how the allowance amount was determined.

Guidelines for the other items in this section are usually provided in the instructions for an IRTIP call for projects. The MPO requires that project costs for IRTIP applications be identified in year of expenditure (YOE) dollars. Identify the anticipated year of construction and the annual escalation rate assumed for project costs. Justification must be provided if the escalation rate differs from what has been provided by the MPO. Design, construction engineering, and contingency costs are often specified as a percentage of the project construction cost. Identify the percentages used for each of these or whether they were derived using some other method. Justification must be provided if the percentages differ from what has been suggested by the MPO and published in the MiTIP data entry form.

Section 4: Base Data Collection/Source

Use this section to identify the data sources and data collection activities used to support project scoping and cost estimating. It is recommended that whoever is scoping and costing the project conduct at least one site visit or field check before submitting the project for the IRTIP. The date is requested to help identify conditions that may have changed since the site visit was made and can be shown as month/year. Other items provide an indication of how reliable and detailed the base data might be. Aerial photography is often used for initial estimates, with field surveys completed for use in design estimates.

Section 5: Right of Way

Since right of way acquisition can have a significant effect on cost and schedule for any project, defining existing right of way, required new right of way, and number and type of relocations is a high priority in project scoping. For the purposes of this section, right of way dimensions may be described in ranges, and parcels to be acquired may be estimated until the design is completed. The source of right of way data should be clearly stated, such as field survey, GIS data, physical evidence in the field, right of way monuments, legal descriptions, plat maps, existing plans, etc. The sources and methods for developing right of way cost estimates should also be stated. These might have been estimated from property tax

data, developed by a right of way appraiser, or developed using some other method. Assumptions for right of way engineering fees, appraisal costs, and relocations should be included.

Section 6: Major Project Components

Check the boxes in this section according to whether each of the listed components are included in the proposed project. For each included component, provide a general description of the quantities, limits and assumptions. The descriptions should reflect assumptions used in the cost estimate. For instance, culverts might be described as two 4-foot by 6-foot box culverts, approximately 42 feet long, and four 18-inch culverts with end sections. The quantity and unit cost of any component checked should be readily identifiable in the cost estimate. Briefly describe any allowances used to estimate the cost of known but unquantified requirements for an activity or work item. It is possible that some items are not known at this time and are included with the project contingency.

Section 7: Environmental Features

Check every box that applies in this section and provide a general description of each component. Unless environmental studies are already complete, it is recommended that a Red Flag Investigation (RFI) as described in the 2045 Long Range Transportation Plan be developed for every project submitted for the IRTIP. The fundamental purpose of an RFI is to identify the level of environmental study required for the project, but it also provides an early indication of factors that may add cost to a project or delay the schedule. If an RFI has been completed, the descriptions in this section can be high level descriptions, highlighting features that may affect the project's cost and schedule. Describe significant environmental resources and features in the project area and whether they will be impacted by the project. If any environmental mitigation measures have been identified at this time, they should be described. If an RFI has not yet been completed, the MPO can assist as part of the IRTIP approval.

Section 8: Utilities

List the utilities in the project area by name and identify whether they are located in public right of way or in their own dedicated easement. The sources of information for utility location and easements should also be identified. At early stages of design, the source may be physical evidence (manholes, meters, pole lines, etc.). If locations have been identified or marked in the field by the utility companies, that should be noted in the description. Any known utility relocation requirements should be noted. Reimbursable utilities should be included as part of the project's construction cost.

Section 9: Cost Estimate Exclusions and Notes

In this section, describe any significant cost estimating exclusions, project risks, or other special circumstances which could impact cost or schedule and have not been identified in other sections of the form. Project risks should be identified in the course of scoping a project. The probability and consequences of each risk event should be considered.

The MPO has developed a planning level cost estimation spreadsheet tool that can be used as a reasonableness check. This spreadsheet tool can be completed in less than 15 minutes. Please use this tool to estimate the project cost and explain any significant differences between the planning level cost estimate tool results and the cost estimate prepared for the IRTIP submittal. It is expected that the cost

prepared for the IRTIP submittal will be more accurate because the project sponsor has more detailed information on project scope and conditions.

Section 10: Form Preparer

Provide the name and contact information for the person that prepared the form, along with the date the form was prepared.

Project Scoping and Cost Estimating Resources

1. Indiana Department of Transportation. Cost Estimating (Chapter 20). In *Indiana Design Manual*. 2013. https://www.in.gov/indot/design_manual/files/Ch108_2013.pdf
2. Hessami, Amir R., Sun, D., Odreman, G., Zhou, X., Nejat, A. and Saeedi, M. *Project Scoping Guidebook for Metropolitan Planning Organization Transportation Projects*. Texas A&M University-Kingsville (TAMUK); Texas Tech University. August 2017 http://library.ctr.utexas.edu/hostedpdfs/tamuk/0-6929-p1.pdf
3. Washington State Department of Transportation. *Cost Estimating Manual for Projects*. April 2015. https://www.wsdot.wa.gov/publications/manuals/fulltext/M3034/EstimatingGuidelines.pdf
4. Washington State DOT cost estimating forms and documents. http://www.wsdot.wa.gov/Projects/ProjectMgmt/RiskAssessment/Information.htm#Estimating%20FOrms
5. Federal Highway Administration Cost Estimating Resources webpage. https://www.fhwa.dot.gov/majorprojects/cost_estimating/resources.cfm
6. Georgia Department of Transportation Limited Scope Concept Report Template. www.dot.ga.gov/.../Limited_Scope_Concept_Report_Template_Appendix_A-2.docx
7. Oregon Department of Transportation Local Agency Project Scoping Notes Template. ftp://ftp.odot.state.or.us/.../LocalProgramUnit/Scoping.../Scoping%20notes%20v8.doc