

AS-P02

TRANSIT ALTERNATIVES ANALYSIS TERMS OF REFERENCE



Template (with estimated consultant time required) for a city
to perform a major transit investments alternatives analysis

Type: TOR Template



BACKGROUND

The Terms of Reference for a Rapid Transit Alternative Analysis Process (RTAAP) should provide the following background material:

- A. **Study Area:** The TOR must define the approximate area for which the RTAAP is to be developed. The study area must coincide as far as possible with jurisdictional boundaries for which population and employment data is readily available. The Background should also summarize the envisioned corridors and populations that Rapid Transit will intend to serve.
- B. **Existing Transit Services:** The Background section should provide a summarized description of current transit services, including any information on current ridership and expected ridership for the new service. Existing challenges and opportunities should also be discussed.
- C. **Other Studies and Initiatives:** The Background section should also provide information on previous or ongoing studies that are expected to influence the RTAAP. Other transportation initiatives, such as construction of high-ways or pedestrian and bicycle facilities should be discussed.
- D. **Bibliography of Reference Plans, Policies and Studies**
- E. **List of Project Stakeholders**

OBJECTIVE OF THE ASSIGNMENT

The goals and objectives of the study must be defined clearly. These objectives may be considered further in the study as the basis of development of evaluation criteria. A sample is as follows:

The purpose of the Rapid Transit Alternative Analysis Process (RTAAP) is to evaluate the comparative benefits, costs and impacts of implementing a transit network among a list of alternative routes and corridors and among a choice of rapid transit technologies. The Study must recommend a locally preferred alternative (LPA) for transit services in the City.

The desired outcomes of the Rapid Transit Service, if implemented, are to:

- Increase ridership through high-quality, frequent and reliable transit service
- Enhance connections with the region's existing transport system and regular route bus service
- Improve mobility by offering more attractive transportation choices in the most viable corridor
- Catalyze transit-oriented development along key corridors.

SCOPE OF ACTIVITIES

The scope of activities for the RTAAP is described in this section. The proposer is encouraged to provide suggested refinements to the work plan and schedule based upon experience with similar transit planning studies, and in compliance with national and state policies, where applicable.

1. **Project Initiation and Development of Evaluation Criteria:** The selected Consultant will schedule a kick-off meeting with the Client's project management team and identify relevant issues for the RTAAP process based upon a review of existing documents and existing conditions. A tour of the possible corridors may also be included in the initial or follow-up meeting. The proposer will synthesize relevant issues and identify how these issues are to be addressed in the RTAAP work plan, including potential refinements to the work plan.

The Consultant will also review and refine the initial problem statement, goals, and objectives and define evaluation criteria based upon the RTAAP Framework. The evaluation criteria may be single-step or multi-step as appropriate and corresponding to the stage of the Rapid Transit Planning Process. The Consultant will present and further refine this information during the kickoff meeting. The problem statement, goals, objectives and evaluation criteria will create the framework for the development and evaluation of alternatives and the content of the Alternatives Analysis.

- a. Client responsibility: Identify key stakeholders and assist in coordinating schedules for kick-off meeting.
- b. Deliverables: Inception Report including Existing Issues and Goals, Objectives and Evaluation Criteria.

2. **Develop Initial Range of Route and Mode Options:** The Consultant will be required to review and summarize the findings of all relevant policy and plan studies, and existing data to understand travel patterns and identify potential transit route alternatives. In addition, the Consultant will review other transportation and land use resources from the area to estimate potential demand for the proposed transit system. The Consultant will identify transit alternatives, including at a minimum a no build alternative, an enhanced transit service alternative, and two or more rapid transit mode and route alternatives. The enhanced transit service alternative will include the considerations for changes to routing, service frequencies, or integration of ITS upgrades such as transit signal priority or real-time arrival prediction systems that can lead to marginal improvements in transit performance. The new route and mode alternatives should be conceptualized to enough detail to include proposed route alignments, and basic choice of modes.

- a. Client responsibility: Provide access to previous plans, policies and studies.
- b. Deliverables: Technical memorandum summarizing conceptual network of initial route options.

3. **Community, neighborhood and stakeholder outreach:** The consultant team shall engage relevant agencies, corridor neighborhoods and businesses, key stakeholders, and the general public throughout the process. The outreach program will include policy and technical advisory committees, public meetings, presentations at neighborhood and business associations, websites and social media, a variety of communication tools, and direct outreach to non-traditional populations and organizations. Stakeholder workshops and/or public open houses should be held at key points in the RTAAP process including: (1) discussion of problems, goals, objectives, evaluation criteria and alternatives, and data gathering (2) evaluation of alternatives, (3) presentation of the draft AA, and (4) selection of the locally preferred alternative. Project information should be translated, as appropriate, to allow for effective outreach. At a minimum, the Consultant will:

- Prepare a stakeholder engagement plan.
 - Prepare presentation materials for advisory committee meetings, public meetings, and other stakeholder presentations.
 - Prepare and provide logistical support including organizing, scheduling, notifying and participating in all meetings and preparing summary notes for all meetings.
 - Track public comments and response and provide to Client upon project completion.
 - Prepare content for the project website, to be maintained by Client upon project completion.
 - Prepare a draft and final report summarizing the stakeholder engagement process and stakeholder feedback.
- a. Client responsibility: Facilitation of Public involvement process.
 - b. Deliverable: Stakeholder engagement plan; stakeholder engagement summary report; newsletters, website content, presentation materials, public meetings, advisory committee meetings, meeting notes, translation services, and other engagement tools identified in stakeholder engagement plan.

4. **Undertake Initial Corridor Screening:** The Consultant will evaluate the initial set of transit route and mode options based on Intensification Capacity, Transportation Capacity and Mobility, Ease of Implementation and Operational Viability, and the potential for Community Building. The development and definition of project alternatives is expected to be an iterative process. The initial set of corridor alternatives developed will most likely include a broad range of options defined in very conceptual terms. Initial activities under this task will focus on narrowing this set of alternatives based on the evaluation criteria. The goal will be to evaluate and refine the alternatives as needed to identify those options that have a high feasibility for implementation.
 - a. Client responsibility: Input and guidance.
 - b. Deliverable: Technical memorandum defining the evaluation of initial alternatives, including assessment of barriers and opportunities.

5. **Conduct Detailed Corridor Assessment:** It is expected that several cycles of analysis and review will take place during this task as the stakeholders build consensus on the assessment results. At this stage, the Consultant should develop preliminary operating plans and ridership estimations for each alternative. The operating plans will define the frequency and span of service, stop locations (spacing), fare collection system, traffic operations (such as queue jumping and signal priority), and other factors that would impact operating speed, boarding and dwell times, service reliability, and overall service quality. Initial forecasting will be completed using any existing travel demand model for forecasting.
 - a. Client responsibility: Provide information on existing transit operating conditions and existing ridership figures for existing transit services.
 - b. Deliverable: Technical memorandum describing operation plans and ridership estimations for each alternative.

6. **Undertake Technology/Mode Review:** Concurrent with Task 5, the Consultant will evaluate the transit technologies, including vehicle type, size, and operating environment, that will most likely fit the needs of the corridor. The transit technologies should be evaluated based on capacity, quality of service, impact on the surroundings and cost. The best mode for each alternative should be selected for a more detailed costing and environmental assessment in the future steps. This will be an iterative process with Task 5. As mode preferences are known, they will need to be fed into the operational plans and ridership forecasts under preparation for Task 5.
 - a. Client responsibility: Provide input on preferences.
 - b. Deliverable: Technical memorandum describing mode and technology review and reasons for selected the final mode.

7. **Prepare capital cost and operating and maintenance cost estimates:** The Consultant will prepare capital cost estimates and operating and maintenance costs based on the operating plans prepared previously for the alternatives. For all alternatives, the Consultant will complete a condition assessment to determine if complete street/track reconstruction is required in any segments. The assessment will also identify any physical constraints or special needs that would have a significant impact on capital cost, as well as any needed right-of-way acquisition. Cost estimates will be prepared utilizing up-to-date unit costs. Unit costs will be adjusted to the targeted year-of-opening based on anticipated annual inflation rates. Costs will include track work, roadway/paving, infrastructure modifications, signals and communications, stations and shelters, equipment, utilities, structures, vehicles, maintenance facility, modifications to existing facilities (for example, intersections), project development/design, project administration, and all other items necessary for design and construction of each alternative.
 - a. Client responsibility: Share knowledge of existing vehicle costs and operating costs.
 - b. Deliverable: Technical memorandum documenting capital and operating and maintenance cost estimates and methodology.

- 8. Assess environmental, historic and community issues:** An initial assessment of potential environmental impacts will be undertaken for the corridor including air quality, noise, vibrations, traffic, energy consumption, cultural and historic resources, native plants and animals, parklands, floodplains, wetlands, lakes, water resources, stormwater management, environmental justice, land use, TOD potential and other significant environmental, social and/or economic impacts. Key impacts that should be studied include: traffic/parking impacts and potential impacts to bicycle and pedestrian mobility.

 - a. Client responsibility: Input and guidance.
 - b. Deliverable: Documentation of these elements and a concept mitigation plan, including an examination of the impacts that each alternative would have to key socio-cultural and environmental characteristics.
- 9. Evaluation of alternatives:** The Consultant will evaluate the alternatives based on the evaluation criteria defined in Task 1, utilizing the technical and cost data developed in the previously described work tasks. The comparison of alternatives will be vetted through the public involvement process described in Task 4.

 - a. Client responsibility: Input and guidance.
 - b. Deliverable: Memorandum documenting evaluation of alternatives methodology and results.
- 10. Prepare final Transit Business Case Report:** The Consultant will prepare draft and final Business Case Report documenting the business case for final selection of the rapid transit alternative. The Business Case will be communicated to the public and stakeholders along the finally selected corridor. The Final Report will incorporate the feedback received from stakeholders, advisory committees and the public.

 - a. Deliverable: Final RTAAP Business Case Report

DELIVERABLES

TASK	DELIVERABLE	TIMELINE
1	Memo #1: : Inception Report including Existing Issues and Goals, Objectives and Evaluation Criteria	M + 2 weeks
2	Memo #2: Technical memorandum summarizing conceptual network of initial route options	M + 1 months
3	Memo #3: Stakeholder engagement plan	M + 1 months
4	Memo #4: Shortlist of alternatives, including assessment of barriers and opportunities.	M + 2 months
5	Memo #5: Detailed Corridor Assessment with operation plans and ridership estimations for each alternative	M + 4 months
6	Memo #6: Mode and Technology Review	M + 4 months
7	Memo #7: Capital and Operating and Maintenance cost estimates and methodology	M + 5 months
8	Memo #8: Summary of environmental, historic and community issues with concept mitigation plan	M + 5 months
8	Memo #9: Evaluation of alternatives results and methodology, including stakeholder engagement summary report	M + 5 months
9	Draft RTAAP Business Case Report	M + 6 months
10	Final RTAAP Business Case Report	M + 7 months

QUALIFICATION OF CONSULTANTS

The Consultant Team must have experience in at least:

- A. One similar Rapid Transit Alternative Analysis Study
OR
- B. At least two studies or project reports which included at least two of the following components: Transit Corridor Concept Plans, Transit Operating Plans, and Transit Ridership Estimates
OR
- C. At least two Transit Feasibility Studies

The Consultant Team must include the following key expertise:

	Key Experts	Year of Experience
1	Project Manager and Senior Transportation Planner	15 years
2	Public Transport Specialist	5-10 years
2	Transport Modeller	5-10 years
3	GIS expert	5-10 years
4	Land Use Planner	5-10 years
5	Environmental Planner	5-10 years
6	Transportation Engineer	5-10 years
7	Social Safeguards Expert	5-10 years

Disclaimer: The Transit-Orientated Development Implementation Resources & Tools knowledge product is designed to provide a high-level framework for the implementation of TOD and offer direction to cities in addressing barriers at all stages. As the context in low and middle-income cities varies, the application of the knowledge product must be adapted to local needs and priorities, and customized on a case-by-case basis.

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