

SECTION 8: TECHNICAL ADVISORY COMMITTEE (TAC)

8.1 Overview

The Technical Advisory Committee is responsible for the projects performed by EWB-USA. Its responsibilities are to provide final project authorization, project prioritization, review of project designs and technologies, and final partner approval. The TAC is focused specifically on evaluating, reviewing and enhancing the progress of EWB-USA projects.

The TAC evaluates project applications received from communities seeking assistance from EWB-USA through the Project Coordinator or Liaison, assigns projects to the chapters and then works with EWB chapters to track project progress through the site assessment, engineering design and field implementation phases. Thus, the TAC oversees the quality of EWB-USA projects from start to finish.

8.1.1) Functions of the TAC

On a consistent basis, TAC members fulfill the primary functions itemized below:

1. *Review EWB-USA Project Applications* submitted by communities or NGOs requesting assistance in development projects.
2. *Assign Projects to EWB-USA Chapters.*
3. *Monitor Project Progress* with the assistance of the *TAC Liaison* who forms the communication interface between EWB-USA's TAC, the chapter's faculty advisor and student officers.
4. *Track Technical Review of Projects* starting from project conceptualization through site assessment, design and implementation. Professional Partners members will be conducting the actual technical design reviews.
5. *Miscellaneous:* From time to time, based on the needs of EWB-USA, TAC members may form sub-committees to collate information on specific issues, e.g., travel safety and planning, health assessments in communities, emergency medical training, funding sources, training opportunities, etc.

* Note: TAC will ask Professional Partners members to perform the technical review and training endeavors.

8.1.2) Composition of EWB-USA's Technical Advisory Committee (TAC)

To offer technical expertise in the many diverse disciplines that must come together to implement a successful EWB-USA project, the optimum composition of EWB-USA's TAC is identified as follows:

A total of 25 to 30 members covering a diverse range of disciplines as shown below:

1. At least 2 to 3 persons with a strong record of experience/expertise in each of the areas shown below:
 - a. WS = Water supply
 - b. SW = Water treatment, Sanitation & Waste Disposal
 - c. EN = Energy & Alternative fuels
 - d. ST = Construction & Buildings
 - e. AG = Agriculture
 - f. IT = Information Systems
 - g. SC = Socio-cultural issues & participatory decision-making
 - h. ES = Environmental assessments & ecosystem sustainability
 - i. MI = Microenterprise/Economics
 - j. HA = Health Assessment
 - k. PM = Project Management
2. Student Representatives:
 - a. Up to 5 additional voting members will be a student representative that will be sent from different schools interested in participating that are within the region.

8.1.3) Selecting New TAC Members:

1. Prospective TAC members should have the following qualifications:

- a. Overseas Experience: This experience can be of many forms, although a “grass roots” experience would be preferred. Some examples are:
 - i. Peace Corps, EWB Projects, US AID, Foreign Travel, Exchange Student etc...
 - b. At least one year of experience with EWB:
 - i. Since the TAC governs EWB projects and administrative duties, it is necessary for the prospective member to have some experience in EWB. Therefore we ask that prospective members have at least one years experience as a part of a chapter prior to submitting an application. It is preferable that the applicant have some sort of project experience or experience as a Liaison.
 - c. The prospective TAC member must have at least one of the qualifications found in section 8.1.3.
 - d. He or she must read the entire sourcebook.
2. Prospective TAC members must fill out the *TAC Member Application (#809)* and submit the form to the TAC.
 3. The TAC will review the form and will either send out a *Letter of Invitation to Join the TAC (#810)* or inform the prospective member that he or she does not have enough experience yet, and to apply again in one year if they still want to join the TAC.
 - a. If the prospective becomes a TAC member, then that person should start attending the TAC meetings. It is requested that the new TAC member only observe these meetings and *not* contribute to the first two TAC meetings since he or she is new to the TAC.
 - i. TAC members must inform the TAC Chair if they will miss a meeting.

8.1.4) Overview of TAC Meeting’s Agenda:

1. The TAC Coordinator reviews the agenda for that evening
2. ARC Reviews
 - a. Each ARC review should be between 1-5 minutes.
 - b. The ARC Reviews should have been completed and all ARC members should have read the reviews prior to the meeting.
 - c. One of the ARC members should briefly summarize the review.
 - d. Any comments should be made at this time
3. Liaisons Project updates to TAC
 - a. The TAC Liaisons provide a 1-5 minute update on their projects.
 - b. There should not be design reviews at the TAC meetings. All design reviews are to be made by the Primary Reviewers prior to the TAC meeting. The Liaison only summarizes the progress of the project.
 - c. For travel and design reviews: The TAC will give final approval or request more information depending on the Liaison’s information presented.
4. Administrative
 - a. The TAC will review any administrative issues that have occurred since the last TAC meeting.
5. Miscellaneous:
 - a. Other items relevant to the TAC may be discussed.

8.2 Projects & TAC

8.2.1) Project Classification Code:

Country Initials (3 fields)-Region Initials (3 fields)-Project Type (2 fields)-Level # (2 fields) – Date Approved in TAC (8 fields)

Example: IND-TAR-EN-L2-12/01/03 = India-Tarumitra-Energy-Level2-DATE

Project Type Classifications:

- WS = Water supply (Drinking & Irrigation)
- SW = Sanitation & Waste Treatment
- ST = Structures & Construction
- EN = Energy
- AG = Agriculture
- IT = Information & Communication Systems
- ME = Microenterprise
- MI = Multiple integrated projects

Level#: This is assigned based on possible impact if the project fails, as shown below:

PROJECT LEVEL	BASED ON IMPACT OF FAILURE	REQUIRED TECHNICAL MENTOR QUALIFICATIONS
Level 1	Failure of project may result in death, severe illness, injury, or significant damage of property. Example, Any building project that people will live or work in.	PE or University Faculty with direct experience in development of infrastructure similar to that proposed in project
Level 2	Failure of project would not result in death, severe illness or injury. However, some damage to property is possible. Example, Mali, Zambougou; Water Storage Project	PE or University Faculty with experience in implementing related infrastructure projects or methods.
Level 3	Failure of project would not result in significant damage beyond limited economic loss. Example: Haiti, Bayonnais; Biomass Fuel Project, loss of capital investment	PE, University Faculty, or person approved by the TAC with appropriate qualifications.

Table 8.1: Risk Level Assigned to Projects

8.2.2) Project Application:

1. A *Project Application Form (#501)* is submitted to by the Community, NGO or Chapter to the TAC. The project application should be written with extensive input from the beneficiary community.
2. The project coordinator classifies the project as to its domain and risk.
3. The Project Application is assigned to an ARC for review.
 - a. The Application Review Committee (ARC) evaluates it against seven criteria:
 - i. Project Definition
 - ii. Needs Assessment
 - iii. Community Involvement and contribution
 - iv. The appropriateness of the technology for the community
 - v. Long-term funding
 - vi. EWB-USA, partner, and community coordination considerations.
 - b. This review by the ARC is a crucial first-time look at the project. The ARC utilizes an evaluation form called *Project Review Form (#802)*, which then attempts to provide a rational method of objectively rating projects. The evaluation form provides a score for each of the above criteria, and the ARC then ranks projects for EWB-USA participation.
 - c. The ARC will provide its recommendation to the Technical Advisory Committee (TAC) for further action on an approved project, highlighting any specific project issues identified in the evaluation process.
 - d. The TAC will send out the *Template for Summary of ARC Review (#803)* to the chapter.
4. The TAC will either Approve, Decline, put on hold, or ask for more information on a project :
 - a. More Information: If a project scores low in a given category but the ARC feels that it meets the values and objectives of EWB-USA, the ARC works with the project applicant to improve and refine the application.
 - b. On Hold: The TAC may place a project on hold due to funding limitations, lack of chapters, or other limiting reasons.
 - c. Decline: If the EWB-USA criteria are not ultimately met, the ARC Declines the project.
 - i. The TAC then sends out an *Application Declined Letter (#804)* informing the project originators that EWB will not be Approving the project.
 - d. Approve: If the criteria are met and the ARC approves the project, it is designated an “open project” and placed in the open section of the website.

8.2.2) Open Projects:

1. Once the project is approved, the following takes place:
 - a. The TAC will accept *Applications to Acquire a Project (#502)* from chapters and assign the project to a chapter
 - i. If a chapter originated a project, that chapter will be given first consideration for the project. The chapter must still submit an application to acquire the project.
 - b. The TAC will assign a Liaison to a project
 - c. The TAC will assign a project to a chapter:
 - i. The TAC sends a *Letter of Introduction (#805)* to the Student Chapter informing them that they have been assigned a project. Contained within this letter should be:
 - Introduction of the TAC Liaison
 - Brief description of the future process
 - Emphasis on community coordination
 - Roles of the Health Metrics and PP Principal Reviewers should be explained
 - ii. If the project is assigned to a student chapter, the chapter must have a mentor within one month of the project being assigned or the project will be given to another chapter. Once the chapter has a mentor, the chapter may begin work on the project.
 - In general, new student projects must wait at least two semesters (8 months) prior to traveling on an implementation trip.
 - iii. If the project is given to a Professional Partners chapter, the chapter can start on the project as soon as the project is assigned. Professional projects must have a project lead.
 - d. Liaison Phone Call:
 - i. The TAC Liaison arranges a friendly phone call with the faculty advisor, the project mentor, and the chapter student officers (See Liaison roles in 8.3.2). In this phone call the TAC Liaison will also discuss the roles of the Health Metrics and PP Principal Reviewers as resources to the local project.

8.2.3) Approval for Either Site Assessment or Implementation Mission:

1. The TAC may also approve the project for either an Assessment or Implementation Mission using the following guidelines:
2. Site Assessment Mission:
 - a. In a Site Assessment Mission, the project site is visited and assessed by one or more project members, to obtain pertinent data related to engineering (topography, water quality, geology, baseline health assessments, etc.) and the specific needs and situation of the host community.
 - b. For project members to go on a site assessment mission, they must submit a *Site Assessment Presentation (#806)* with an updated *PSM (#504)* and a completed *Travel Readiness Checklist (#601)*. These will be reviewed by the TAC and the liaison and the liaison will coordinate feedback to the project group. The project group will be expected to make changes prior to the site assessment trip.
 - c. After an assessment mission, the assessors create or revise the *Project Summary Matrix (PSM) (#504)* and report their findings to the TAC, which determines whether or not to proceed with the project. A project member(s) or contact already in country or nearby often carries out an assessment mission.
3. Implementation Mission:

- a. The Implementation Mission consists of at least four steps:
 - i. Project Planning and Technology Selection
 - ii. Engineering design including prototype testing at the University Chapter with iterative design modifications
 - iii. Planning for the field trip, including emergency preparedness
 - iv. Field implementation trip.
- b. Prior to the actual Field Implementation, an EWB-USA member or contact has been to the host community, has concurred with the needs and on-the-ground situation described in the application, reviewed the feasibility and appropriateness of the project (PSM), identified metrics for outcomes assessment, and, determined that the project is ready for student and professional participation for design and construction. The implementation of the project is then carried out.
- c. A final project report must be submitted at the end of a field implementation mission, describing the entire project process and the outcomes assessment. Outcomes Assessment should include not only outcomes and impacts in the host community, but a review of student learning and transformation during the course of the project. Project results, outcomes, and lessons learned should be widely disseminated to encourage sustainable development practices worldwide. This is described in more detail in the Projects section.

8.3 Roles of TAC Personnel:

8.3.1) Application Review Committees (ARC):

1. The ARC reviews projects for their consistency with EWB's mission and to ensure that the projects are beneficial for a chapter.
2. From among the TAC members, several three-person Application Review Committees will be formed periodically to review the many Project Applications received by EWB-USA.
3. Each ARC will be composed of:
 - a. The first TAC member drawn from the first six disciplinary areas *a-f* (as appropriate to the specific project application)
 - b. The second ARC member each from *g* and *h*
 - c. The third from *i-k*, as needed.
4. Project Approval Guidelines:
 - a. The fundamental question each ARC Reviewer will ask is:
 - i. Will EWB-USA's presence in this community strengthen the local indigenous people's lives, community, health, culture, dignity, and self-sufficiency in a sustainable and appropriate way?
 - b. Other Guidelines for Project Approval:
 - i. Are the project's objectives well defined?
 - ii. What is the impact on the community?
 - iii. Is a site assessment necessary?
 - iv. Is there community involvement
 - v. What is the appropriate/sustainable technology
 - vi. Are there funding opportunities?
 - vii. What is the role of an EWB-USA student and professional?
 - c. See the "Project Section" 8.2.2 and the *Project Review Form (#802)*

8.3.2) TAC Liaison:

1. *Overview:* The project liaison is a member of EWB-USA's TAC who provides the communication interface between the Chapter working on a project and the EWB-USA TAC. The liaison plays the role of

communicator, without imposing his/her own personal views on how a project should proceed. When a project is approved and a chapter is approved to work on it, the chair of the TAC will send an email making the initial introduction between the TAC liaison, the chapter student officer(s), and the chapter's faculty advisor. The email will include a summary of comments from TAC review of the project, a draft *Project Summary Matrix (PSM) (#504)*, and the file titled *Project Classification & Mentor Qualifications (#405)*.

2. *What the Liaison does when they are first assigned a project:*
 - a. Arrange a friendly phone call with the chapter student officer(s) and faculty advisor(s) and cover the following six points:
 - i. Make sure it is understood that the chapter is responsible for doing the rest of the project consistent with EWB-USA guidelines, including following-up with the community/NGO, finding a local professional mentor appropriate for the project, and, updating the TAC as the project develops.
 - ii. Indicate that the Liaison is available to communicate both project progress and project problems to the TAC for assistance and troubleshooting from the TAC. The TAC can also help find a professional mentor.
 - iii. Discuss project timelines (see below) and indicate you will be in contact throughout the project. Reiterate that as the project progresses, the PSM, trip reports, and any photo essays, etc., are requested to be shared with EWB-USA, both to track progress, as well as for use in EWB-USA reports and brochures.
 - iv. Initially, the TAC Liaison will be solely responsible for communication to the Project Lead. It will be at the discretion of the TAC Liaison to determine if communication can occur between the Health Metrics or Professional Partner Reviewer and the Project Lead. All communications are to be copied to the TAC Liaison so that they are aware of all project issues.
 - v. Verify if all participants on the project are EWB-USA members, as per the chapter agreement with EWB-USA.
 - vi. The project Liaison should emphasize the project members read the "Projects Section".
3. *Within One Month of Adopting a Project:*
 - a. A student chapter must have a mentor for the project. The liaison should check this.
 - b. The liaison should ensure the mentor is appropriate for the project and that the project planning is reasonable.
4. *Within Two Months of Adopting a Project:*
 - a. The chapter is expected to make contact with the NGO/community within 2 months of adopting a project and submit an updated PSM to the liaison addressing the TAC comments (to the extent possible), identifying the project professional mentor(s) (if applicable), and listing projected dates for site assessment, design and implementation. The chapter should also work on the travel readiness checklist and share it with the liaison.
5. *Two Months Before Site Assessment (if there is one)*
 - a. A *Site Assessment Presentation (#806)* with an updated *PSM (#504)* and a completed *Travel Readiness Checklist (#601)* needs to be submitted to the TAC before the site assessment trip. The liaison will deliver these items to the TAC. These will be reviewed by the TAC and the liaison and the liaison will coordinate feedback to the project group. Either the Liaison or one or more members of the project group should attend the meeting (either in person or via phone) to present and answer any questions. The project group will be expected to make changes prior to the site assessment trip.
6. *After Site Assessment:*
 - a. The project group should plan to share with the TAC the outcomes of their site assessment through a site assessment report and an updated PSM – this is not for TAC review but for sharing and posting on the web. The TAC liaison will ascertain if the site assessment results favor full project development and implementation.

7. *Initial Design Review (preferably 3-4 months before implementation):*

- a. When the chapter has identified its engineering strategy and is comfortable with basic design, a design summary, a draft field implementation plan and a finalized travel readiness checklist should be submitted to the TAC through the liaison.
- b. The design submittal will be reviewed by the Design Reviewer(s). The Liaison will be responsible for coordinating and finding appropriate design reviewers (EWB-USA will help). The liaison will coordinate feedback from the Design Reviewer and the project lead. The project team is expected to make the recommended changes to the design. NOTE: This review is for quality control only. The Design Reviewer is not responsible for designing the project.
- c. A detailed presentation should be prepared and sent to the TAC via the Liaison. Either the Liaison or one or more members of the project group should attend the meeting (either in person or via phone) to present and answer any questions.
- d. This review should be planned at least 3 months in advance of the expected travel date. This is so that the chapter has sufficient time to respond to TAC comments, make any necessary changes and resubmit the design to TAC for final approval before travel.
- e. The project team should NOT be purchasing any tickets or any other travel related items until they have received final approval on their design and received a travel approval letter from the TAC.

8. *Final Design Review (Two Months before Implementation)*

- a. The chapter working on the project should submit the final design to the Liaison, so the Design Reviewer can perform a quality control check on the design.
- b. The Liaison should remind the chapter that travel arrangements should not be made until the design reviewer has signed off on the design.

9. *After Field Implementation:*

- a. The team should plan to share with the TAC the outcomes of their implementation trip through a final project report, summary sheet and an updated final PSM – this is not for TAC review but for sharing and posting on the web. It helps us to create a knowledge resource for other projects, and also it helps us to gain funding for future projects, especially when we have a completed detailed budget.
- b. The Liaison's job is not done until the final report is into the TAC.

10. *Periodic Outcomes Assessment:*

- a. Chapters often have multiple stages of a project. It is necessary for the liaison to check in with the chapter to mark the progress of that project and to ensure that the chapter is still in contact with the community. The chapter who should be in contact with the community to check if the project has been successful in the long-term.

11. *Note:* If the TAC Liaison is placed into a conflict resolution role if the Project Lead and either the Health Metrics or Professional Partner Principal Reviewer disagree. If this is the case, the TAC Chair shall take a lead role in resolving the conflicts.

8.3.3) Criteria for and Responsibilities of the "Professional Review Team" and the "Principal Reviewer"

1. To ensure the quality of each EWB Project a design review must be conducted of each project (for both student and professional projects) prior to the individuals traveling to the country. The Professional Reviewers are the quality control on each project and ensures that large design flaws do not go unnoticed, particularly when those flaws could endanger someone's life.
2. The Principal Reviewer is the individual who will head the professional review team. He or she will organize the design review of a project and will determine other competent individuals with the necessary knowledge to review the project in conjunction with the Principal Reviewer. All members of the team, including the Principal Reviewer, will come from EWB's Professional Partners chapters. During technical review of a project, Professional Partners shall provide one coordinator for all expertise groups. This one coordinator shall be called the Professional Partners Principal Reviewer and shall be responsible for all project coordination with the TAC Liaison, and sometimes the Project Lead.

3. Some of the items that will be reviewed are:
 - a. Overall sustainability of the project (local materials, environmental impact, local involvement, training, etc)
 - b. Health and Cultural impact
 - c. Building Drawings
 - d. Calculations

8.4 Documents for this section:

1. *Assigning Projects to ARC (#801)*: This letter is sent to ARC members when there is a project that needs to be reviewed by the ARC. It informs the individuals of the project and the other ARC members on the team.
2. *Project Review Form (#802)*: This form is used by ARC members to review projects and provides a more objective method for determining which projects should be Approved by EWB.
3. *Template for Summary of ARC Review (#803)*: This letter is to inform the community and the project members of the ARC findings.
4. *Application Declined Letter (#804)*: This letter is sent to the individuals that sent in the project application form to inform them that their project will not be approved by EWB.
5. *Letter of Introduction to Liaison (#805)*: This letter is sent to the Project Lead, Faculty advisors or mentors, the Liaison, the host community and any other individual working on the project, to introduce the Liaison to the project team.
6. *Project Progress Presentation (Assessment) (#806)*: This is a sample power point presentation format used by chapters to present their site assessment trip plans to the TAC.
7. *Project Progress Presentation (Implementation) (#807)*: This is a sample power point presentation used by chapters to present their implementation trip presentation to TAC.
8. *Travel Approval Letter (#808)*: This letter will be sent to the project group after the TAC has approved the site assessment mission or the implementation mission. Once this letter has been received, the project members can make travel arrangements.
9. *TAC Member Application (#809)*: This is the application prospective TAC members must fill out to be considered for TAC membership.
10. *Letter of Invitation to Join the TAC (#810)*: This is the letter sent to individuals when TAC wants the person to become a member of TAC.