
GREATER PHOENIX AREA High Tech Manufacturing Workforce Needs Assessment

PROJECT PROSPECTUS

Overview

Although recent labor market survey data indicates projected job growth on the part of high tech firms for the next 12 months, there is a critical lack of comprehensive information about where these organizations are headed from a workforce standpoint over the next 3 to 5 years. We know little of their intent to maintain a manufacturing presence in the valley and even less about the nature of the technical direction and the workforce skills required to support it's implementation. The information is critical to the workforce development community's ability to respond in a proactive fashion to the workforce needs of the future.

The proposed project will culminate in the development of a strategic framework for meeting Greater Phoenix's current and future high tech workforce needs. To the extent feasible, the project will provide information as to numbers of jobs with varying skill needs and levels, a time frame for projected growth of the industry, and likely scenario to address various demands as the high tech industry continues to grow in the area.

Another key component will be to determine employer high tech workforce training and education needs. The project will analyze survey results, as well as input from industry focus groups and interviews with selected high tech employers, to assess current and expected high tech workforce needs.

Using the data obtained from each of these tasks, the project team will prepare a strategic framework that will include issues and recommendations of actions and initiatives that could be undertaken to meet Greater Phoenix's high tech workforce needs.

Project Scope

The project will assess Greater Phoenix's high tech industry workforce needs, by different high tech subsectors, to identify existing worker skill-mix, expected near-term and long-term hiring needs, and specific high tech skill requirements expected. The project will also yield valuable information regarding the future manufacturing product mix.

High Tech sectors presently identified include:

- Semiconductor/ Electronic Instruments ¹
- Aerospace
- Telecommunications
- Advanced Composites
- Bio/Medical Devices
- Sustainable Systems

¹ (Nanotechnology, and Micro Electro-Mechanical devices - MEMS)

Assessment Data Collection Methodology

1. Mail Base Survey

The project proposes to undertake a mail-based survey of high tech firms in the Greater Phoenix area to assess the current occupational mix and expected near-term and long-term hiring needs across the full base of high tech companies. This survey will provide us a forecast of the growth expected in high tech occupations in the future. It will also help us to compare and contrast with national trends.

2. Targeted Interviewing

The mail based survey will not provide the in-depth contextual information on skill needs of employers that a more targeted interviewing will provide. The project will conduct telephone and on-site interviews with CEOs and senior officials from selected high tech companies. Interviewees will be chosen from a mix of large, medium, and emerging companies in each of the major high tech industry sub sectors. The interviews will be used to obtain information on the hiring experiences of high tech employers, and industry's knowledge and opinion of existing high tech workforce training initiatives and activities, and to identify workforce needs that are not currently being met.

3. **Facilitate focus group discussions.** For each of the major high tech sub-sectors, focus groups will be used to help identify unique ways in which business and workforce development can collaborate in preparing and developing it's the high tech workforce, and to obtain industry's views on state actions to develop high tech workers. The focus groups will be designed to involve key industry leaders and other stakeholders in intensive discussion regarding high tech workforce training needs and innovative mechanisms that can be put in place that will allow both the public and private sectors to respond rapidly to the constantly changing education and training needs.

Data Outcomes

A key outcome of the targeted industry interviews and focus group discussions – and informed by the high tech occupational survey – will be the development of profiles of key occupations and skills needed across the high tech industry in Phoenix. Six to eight occupations, broken into various industry segments, will be profiled as to skills, education and experience requirements, projected employment increases, curriculum content required from educational institutions, linkages to broader or related career paths, and priority of need.

Data Collection Hierarchy

A successful assessment requires that development of a comprehensive database from which can be extracted baseline information the current state of high tech manufacturing in addition to providing an accurate picture of the industry 3 to 5 years from now. The data would be collected, via the methodology discussed previously, in a hierarchical manner, starting first with the industry sub sector and then dropping progressively down to questions regarding existing manufacturing functions (big M), product composition, degrees of manufacturing automation, required occupation, to include growth, and finally the required skills. The assumption is that there is little value in collecting information regarding an existing occupation and skill set if the direction of the company is to move or eliminate that function locally. Although the definition of a required future skill set may still be undefined, the availability of data that clearly points to the

widespread use of a technology or the composition of a product could hasten and justify the investment resources.

Proposed Assessment Consulting Practice

Battelle's Technology Partnership Practice proposes to undertake this assignment with experienced individuals familiar with high tech industries, education and training programs, higher education, and with the State of Arizona. In addition to the previous work with Maricopa Community Colleges Bioscience Workforce Strategy, Battelle's Technology Partnership Practice has undertaken extensive efforts over several years in workforce development with the State of Connecticut where they continue to serve as outside advisors in their efforts to position education and training resources to serve the needs of high tech industries. Battelle addresses education and training issues in all their strategy efforts as well.

Battelle also brings extensive knowledge of Arizona and its high tech industries to this effort because of two recently completed projects with the Arizona Department of Commerce – Arizona's Information Technology/Advanced Communications Roadmap and Arizona's Sustainability Systems Prospectus. Both of these efforts originated from an earlier Battelle project with the Arizona Department of Commerce that identified the State's core competencies and technology platforms in these areas. Both series of efforts required Battelle to work closely with Arizona technology industries, trade associations, and Steering Committees representing leaders from industry and other organizations.

Finally Battelle completed the Arizona Biosciences Roadmap for the Flinn Foundation in December, 2002, and with ongoing financial support from the Flinn Foundation continues to assist in its implementation. Because of this work, as well as a recently initiated project with the Arizona Disease Control and Research Commission, Battelle can provide economies of scale in undertaking this proposed work at the same time in Arizona.

Partner Commitments

The comprehensiveness of an effort such as defined in this **PROJECT PROSPECTUS** requires not only significant financial resources, but also significant time and effort from the high tech manufacturing business community that the project wishes to assess. It is the determination of the **PROJECT LEAD ORGANIZATION**, the Maricopa Community Colleges, that the business community can best be engaged in this assessment through their membership affiliation with organizations such as the Arizona Electronics Association, Arizona's Technology Council, Arizona Association of Industries, and the High Tech Industry Cluster. To that end, no financial support is being solicited from these organizations or their members at this time. It is anticipated that these organizations will be the principal conduits for both communicating the assessment to their membership and for providing major assistance in organizing the process by which the data collection methodology is carried out.

We anticipate that the financial resources to support this critical needs assessment will come from one or more of the following communities.

- Formal Secondary and Postsecondary Education Organizations
- Workforce Development Organizations
- Economic Development Organizations

A campaign for fund raising is deemed not to be in the best interest of this project from both a community commitment perspective and resource standpoint. The project instead will be funded through a limited number of both visionary and stakeholder sponsors from the organizations cited above. Visionary sponsorships are presently limited to two, one from Education and one from Economic Development. Salt River Project's Strategic Economic Services and the Maricopa Community Colleges have stepped forward in their commitment to fulfill the Visionary sponsorships. Stakeholder sponsorship commitments have presently been obtained from the Arizona Department of Commerce, the Arizona Department of Education's Career and Technical Education Department, and the Greater Phoenix Economic Council.

Additional Stakeholder sponsorships will also be solicited from Maricopa County's Workforce Investment Board and the City of Phoenix's Workforce Investment Board. Both of these workforce investment areas play a critical role in the deployment of workforce development programs for youth, disadvantaged adults, and dislocated workers. Although the end product of this assessment will be prove to be a superb tool for guiding displaced technology workers into skills training programs for jobs which we know have a future in the Greater Phoenix area, the same framework can be used as a guide for the placement of youth and disadvantaged adults into entry level jobs that hold high wage growth opportunities.

Project Management

An Advisory Steering Committee will formed for this project to insure stakeholder input and ownership of the completed work. Included in its membership will be key industry representatives from among the segments that are the target of this work, key trade associations such as the AeA and the Arizona Technology Council, key representation from the research universities including ASU Tempe and ASU East, the State Department of Commerce and ABOR, the Flinn Foundation, Maricopa Workforce Connections, Phoenix Workforce Connection, K-12, and others to be identified. The Steering Committee will serve as a "kitchen cabinet" of key leaders to guide this effort. This group will ensure that the project team is being responsive to the needs, opportunities, and priorities of the partners.