



**2022-2023 National Environmental Health Science
and Protection Accreditation Council (EHAC)
Undergraduate Degree Programs
Outcome Assessment Report**

Compiled by
Executive Director Leslie Mitchell

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I. Introduction

This report details analysis of the data provided by former undergraduates of programs seeking reaccreditation during the 2022-2023 academic year and a number of their supervisors.

II. Background

EHAC Undergraduate Requirements Section VI. Reporting Obligations of Accredited Programs Part D. Program Outcomes Assessment Survey states that:

“At the time of reaccreditation, the institution shall survey program graduates and employers via the Council’s outcome assessment tool. All graduates since the last accreditation shall be in the pool of those to be surveyed. The completed tools shall be gathered by the institution and forwarded to the Executive Director of the Council six months prior to the annual meeting of the Council. The Council will supply a summary of the information gathered to all accredited programs on an annual basis.

The purpose of this survey is to determine the adequacy of the accreditation process to the needs of the professional practice of environmental health. The information gathered by an institution through the outcome assessment process will not be used as part of the evaluation review for reaccreditation purposes for a given institution. The Council will use the compiled information from all institutions undergoing reaccreditation to evaluate and consider changes to the requirements of accreditation.”

The outcome assessment tool consists of two surveys conducted via surveymonkey.com, one for current employees and the other for their supervisors. It is distributed to the reaccreditation candidate Program Directors for distribution to former students. The graduates then provide the survey link to their supervisors for survey completion.

III. Survey Context and Summary

EHAC’s core mission is to accredit Environmental Health (EH) Programs that provide a scientifically rigorous and practical based education, which prepares graduates to enter the EH field “work force ready” and prepared to problem solve using critical thinking skills acquired during their university education. Toward this end, EHAC is continuously identifying strengths and weaknesses related to graduates successfully entering and progressing in the EH field of their choice. Survey responses from both graduates employed in the EH field (employees), and their supervisors assist EHAC in assessing and adapting Undergraduate Requirements and Graduate Guidelines for accreditation to the ever-evolving arena of Environmental Health.

Questions for both employees and their supervisors focus on assessing the adequacy and effectiveness of an employee’s knowledge, skills, and abilities related to their EH job, with employees conducting self-assessments and supervisors evaluating their current employees.

The following report provides a graphic representation of the results of the surveys. Table 1 presents the EHAC accredited undergraduate degree programs going through the 2022-2023 reaccreditation process, the number of employee responses, their dates of

graduation, and the number of supervisor responses. There were forty-three total employee respondents to the survey. Thirty-eight of these respondents are currently employed in EH related professions. Five respondents are employed in a field other than Environmental Health. Graduate respondents working in Environmental Health are included in this report (38 unless otherwise noted). Fourteen supervisors of EH employees participated in the survey and their responses are included in this report, as well.

Table 1 2022-2023 Outcome Assessment Respondents

Re-accreditation Applicants	Next Accreditation Review	Initial Accreditation Year	Graduating Classes Reflected	Number of EH Employee Respondents	Number of Supervisor Respondents
Benedict College	2024	2004	2017	2	1
University of Wisconsin Eau Claire	2024	1975	2013, 2015, 2016, 2017, 2018, 2019, 2020, 2021	15	1
Western Carolina University	2024	1984	1994, 2017, 2018, 2019, 2020, 2021, 2022	21	12
Totals				38	14

IV. Employee Survey Results

A. Employee Skills

Charts 1-3 present employee self-assessments of general job skills, interpersonal office skills, and skills related to interpreting data. Most employees rate themselves proficient, very, or most proficient among these categories with majorities in the following areas:

- Most Proficient
 - Working in a Team Setting
 - Time Management
- Very Proficient
 - Information Technology/Computer Skills
 - Technical Writing
 - Identifying Reliable and Relevant Information
 - Drawing Appropriate Conclusions
 - Choosing and Defending an Appropriate Course of Action
 - Leadership Skills
 - Organizing Workflow
- Proficient
 - Public Speaking
 - Project Planning and Management
 - Leadership Skills
 - Applying Research Methods and Problem Solving

Employees rate themselves most highly in the EH Specific Areas of risk assessment, risk communication, and risk management, followed by toxicology and epidemiology (Chart 4). Eleven percent of the respondents reported toxicology and epidemiology as non-applicable to their job.

Chart 1

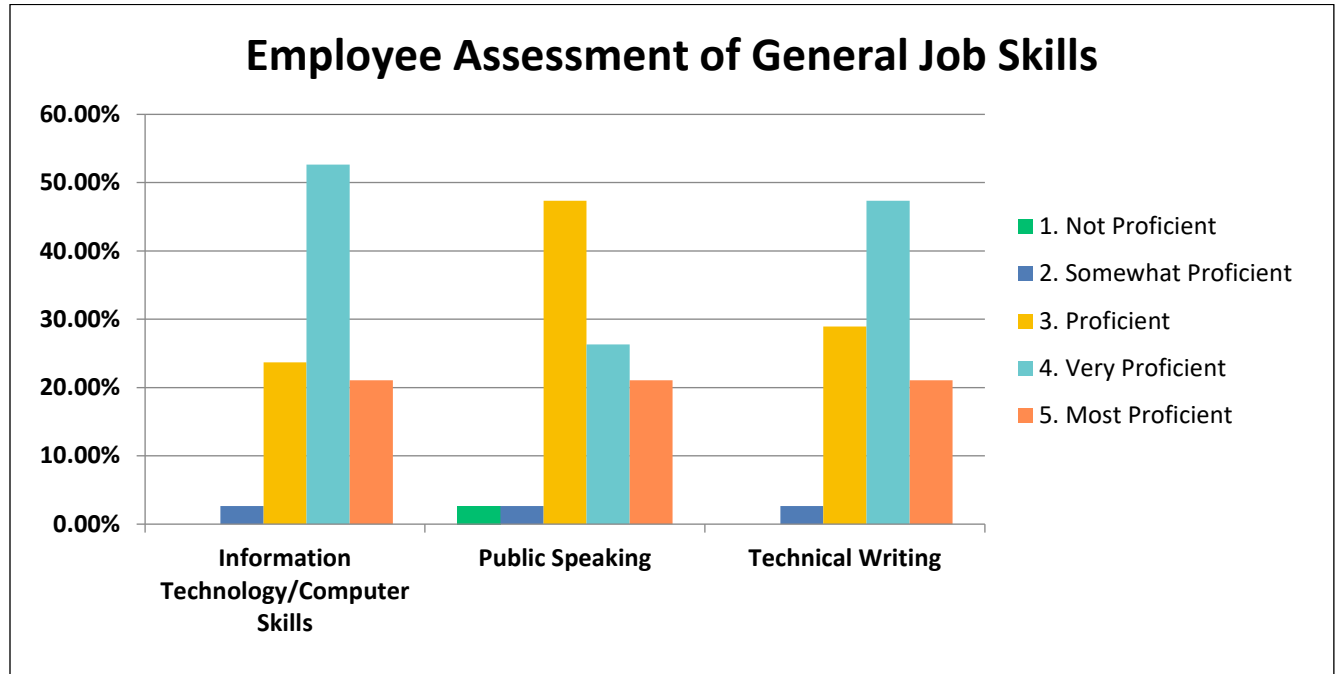


Chart 2

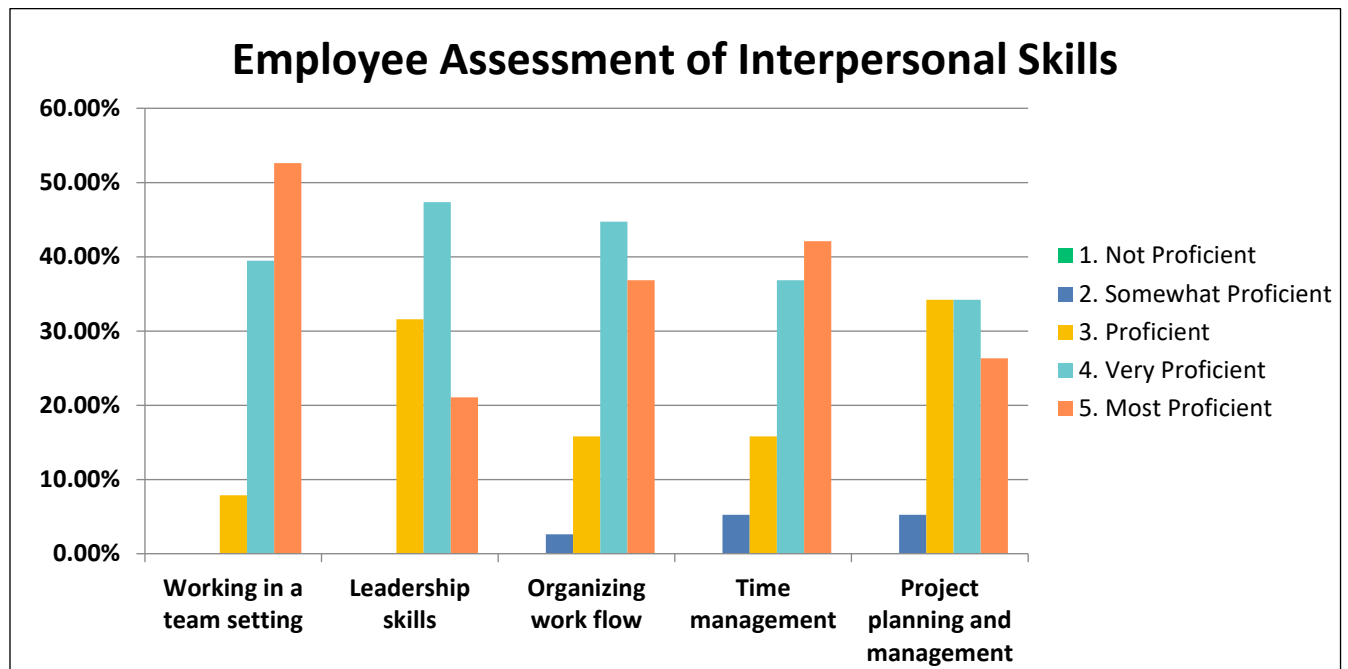


Chart 3

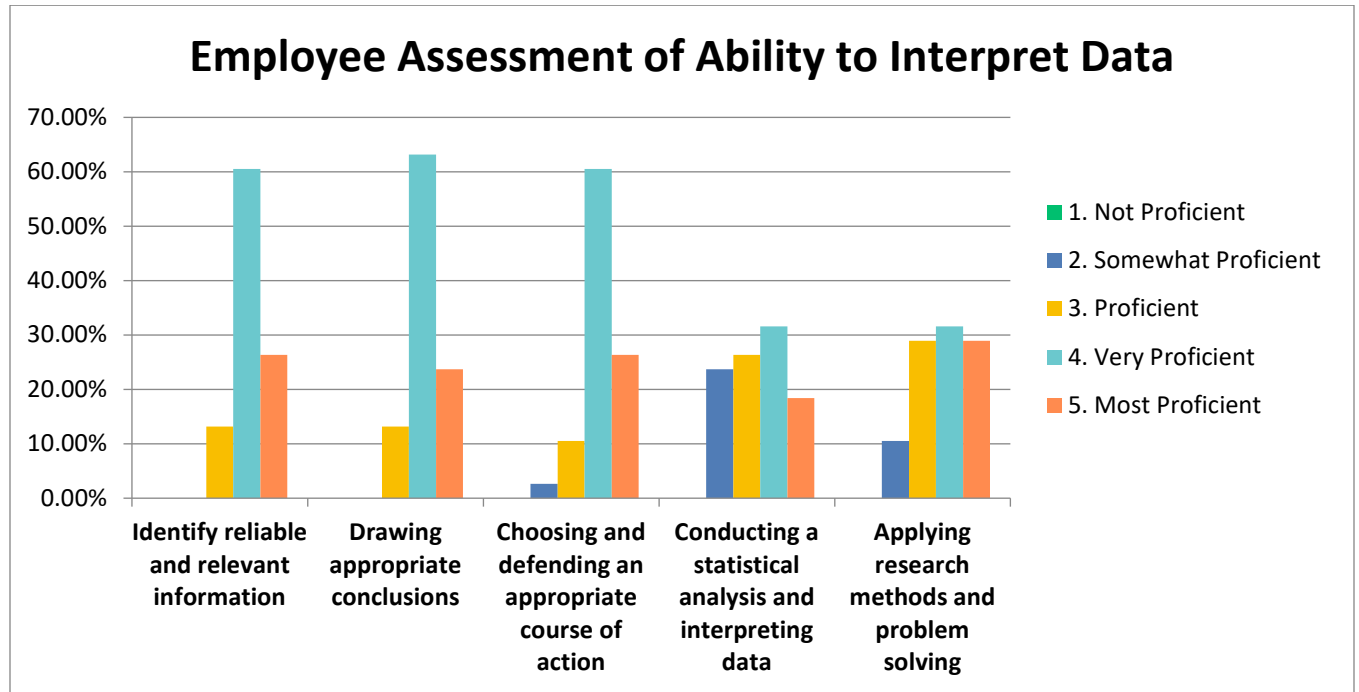
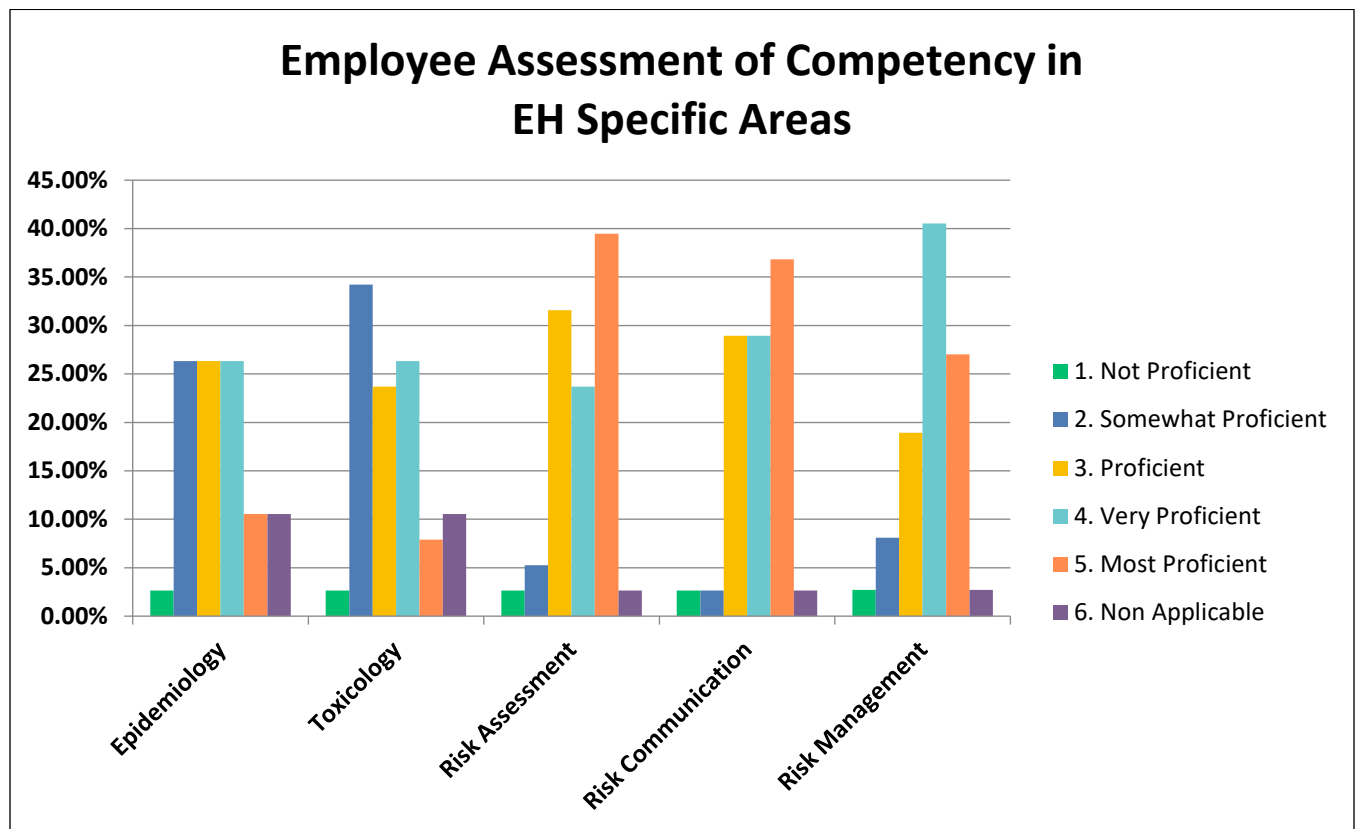


Chart 4



B. EH Specialty Area Relevance

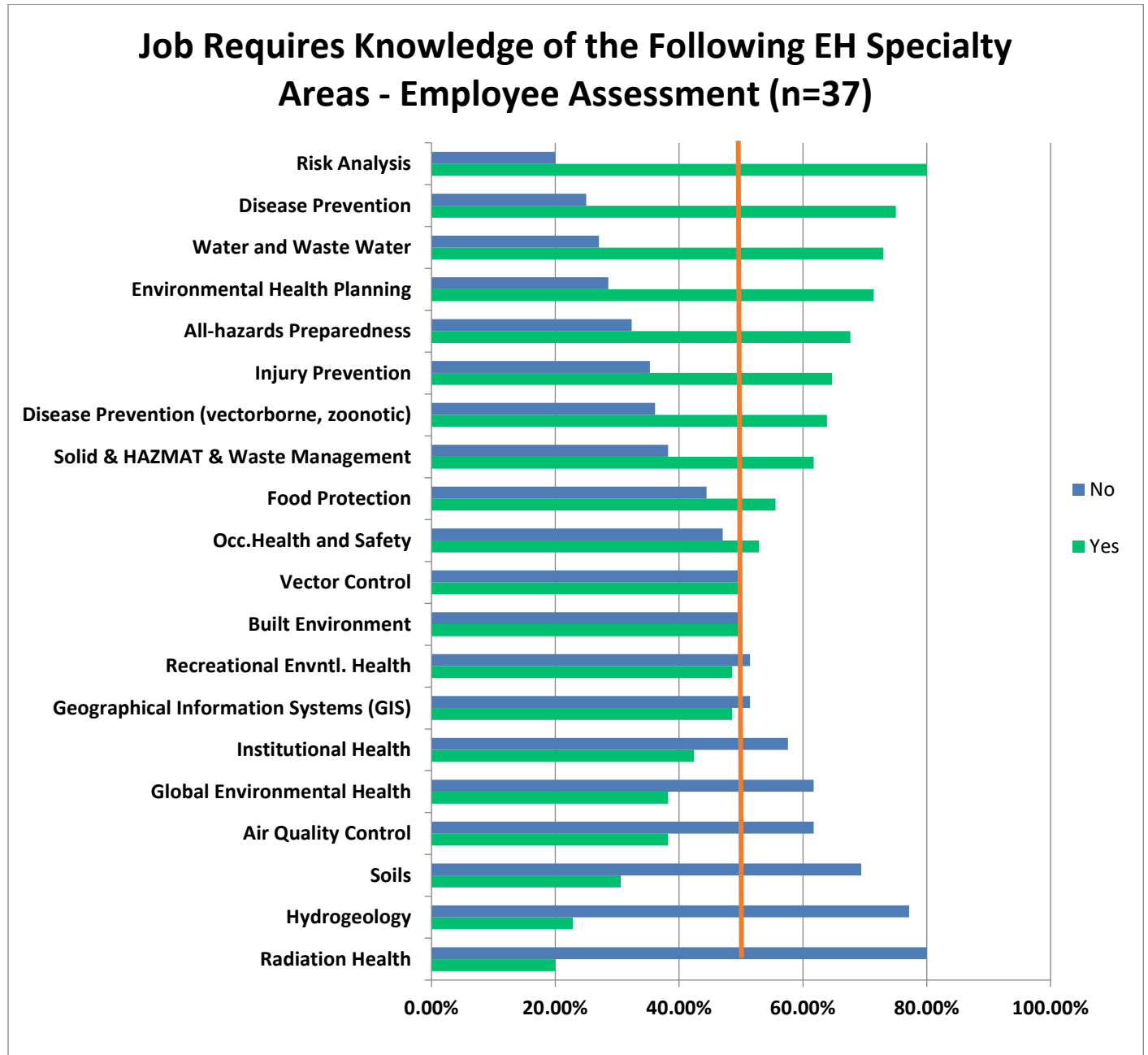
Employee respondents were asked to answer “Yes” or “No” if their job requires knowledge in the following EH Specialty Areas (Chart 5). The EH Specialty Areas cited as necessary by at least 50% of employees responding included (listed from most cited to least):

- Risk Analysis
- Disease Prevention
- Water and Waste Water
- Environmental Health Planning
- All-hazards Preparedness
- Injury Prevention
- Disease prevention (e.g., vectorborne, zoonotic, etc.)
- Solid and Hazardous Material and Waste Management
- Food Protection
- Occupational Health and Safety
- Vector Control
- Built Environment

Knowledge is reported less necessary and cited by more than 50% of survey respondents in the following EH Specialty Areas (areas are listed from most cited to least)(Chart 6):

- Radiation Health
- Hydrogeology
- Soils
- Air Quality Control
- Global Environmental Health
- Institutional Health
- Geographic information systems (GIS)
- Recreational Environmental Health

Chart 5



C. Specialty Area Program Preparation

Employee respondents were asked to rate their level of preparedness in a number of EH Special Areas. Chart 6 presents employee responses. Fifty percent or more of employees report being “Well Prepared” or “Somewhat Prepared” in the following EH Specialty Areas (listed from most cited to least):

- Disease Prevention
- Disease Prevention (e.g. vectorborne, zoonotic, etc.)
- Food Protection

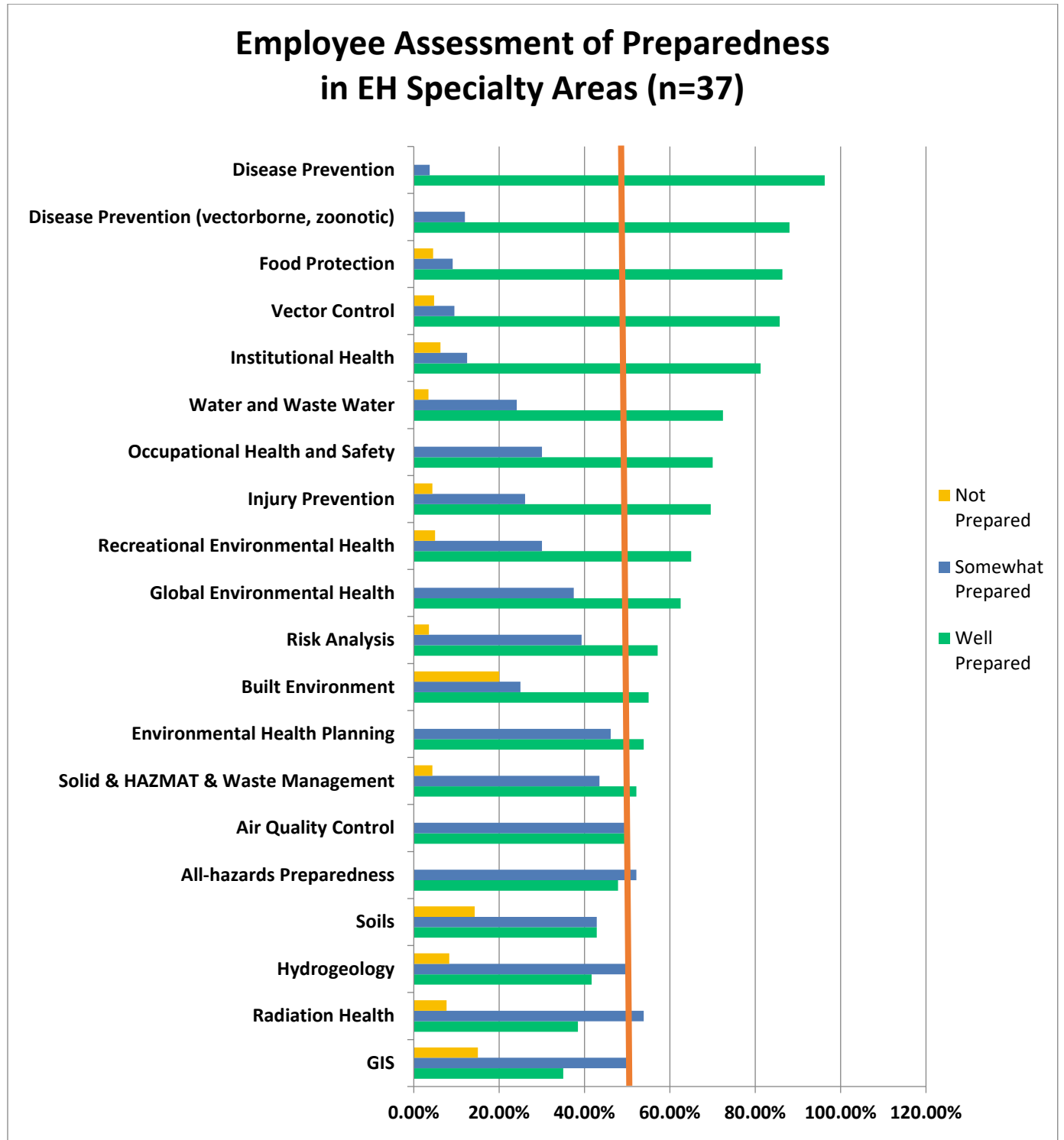
- Vector Control
- Institutional Health
- Water and Waste Water
- Occupational Health and Safety
- Injury Prevention
- Recreational Environmental Health
- Global Environmental Health
- Risk Analysis
- Built Environment
- Environmental Health Planning
- Solid and Hazardous Material and Waste Management
- Air Quality Control

Specialty EH Areas showing the highest percent of employees reporting they were not prepared include:

- Built Environment
- Geographical Information Systems (GIS)
- Soils

Note that the above EH Specialty Areas, except “Built Environment” in which graduates report they are *not* prepared were included in those areas identified by at least 50%, or more, of respondents as not being required by the employees’ current positions.

Chart 6



D. Employee Workplace Data

Chart 7 presents the period of time it took respondents to find an EH related job. Twenty-four respondents located EH employment in the first three months after graduation.

Chart 7

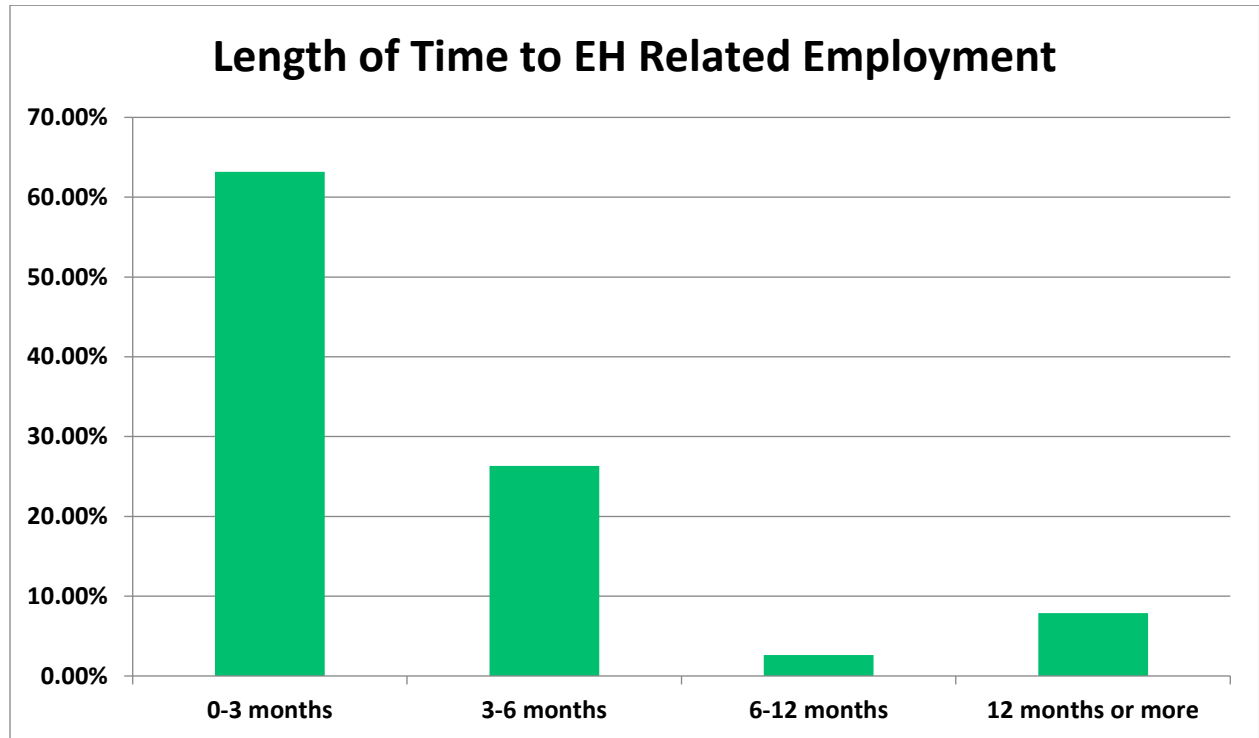


Chart 8 presents job sectors for graduates of reaccrediting degree programs. As previously mentioned, 38 respondents are currently employed in the Environmental Health field. Employment sectors include private companies or corporations, local or federal government agencies, and educational institutions. Table 2 shows current job titles held by respondents.

Chart 9 shows the distribution of those employees who are employed by local, state, or federal government. One employee works for the United States Public Health Service, one employee is employed with the Centers for Disease Control and Prevention, 19 employees work for local or state level health departments, and 17 work for another agency.

Employees report working primarily in Food Protection, Water or Waste Water Treatment, Manufacturing, and Agriculture or Food Production, as shown in Chart 10. However, the “other” category reflects a number (11) of responses as well. “Other” EH work areas include:

- Construction
- Drinking Water Restoration Team
- Environmental Health and Safety
- Environmental Health Laboratory
- Healthcare and Education
- Infectious Diseases
- Industrial Hygiene
- Warehousing and Manufacturing

Salary data shows a salary range for survey respondents between \$30,000-40,000 and >\$70,000 (Chart 11).

Table 2 Job Titles of Employee Respondents

Job Title	Total
Analyst	1
Engineering Technician for Red Hill	1
Environment Health Officer	1
Environmental Health & Safety Coordinator	3
Environmental health and safety specialist	3
Environmental Health and Safety Technician	1
Environmental Health Officer	1
Environmental Health Sanitarian	2
Environmental Health Specialist	8
Environmental Health Specialist I	1
Environmental Health Specialist/REHS	1
Environmental Health Supervisor	1
Epidemiologist	1
Epidemiologist 1	1
Health Compliance Officer	1
HSE Safety Coordinator	1
Lab Analyst	1
Microbiologist	1
ORISE Research Fellow at CDC DVBD	1
Pool Program Specialist-REHS	1
Research Assistant	1
Senior Environmental Health and Safety Specialist	2
Senior RHES	1
Water Quality Technician	1
Workers' Health and Safety Manager	1

Chart 8

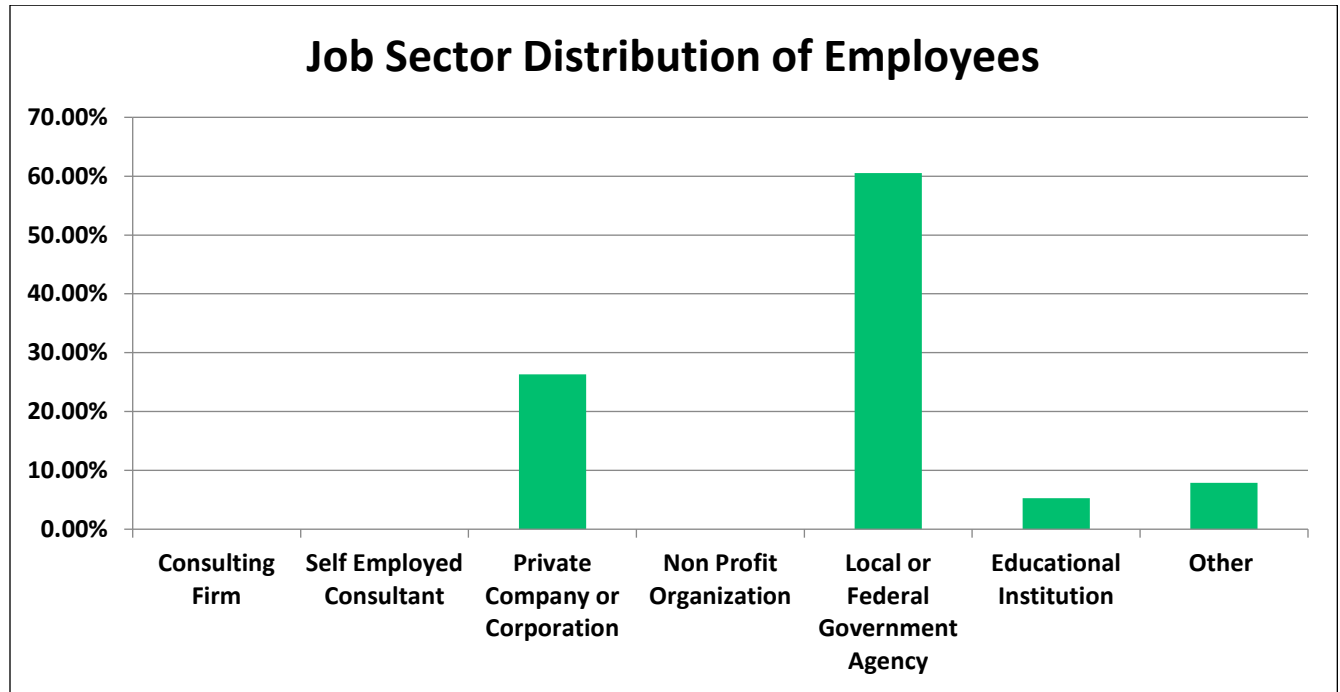


Chart 9

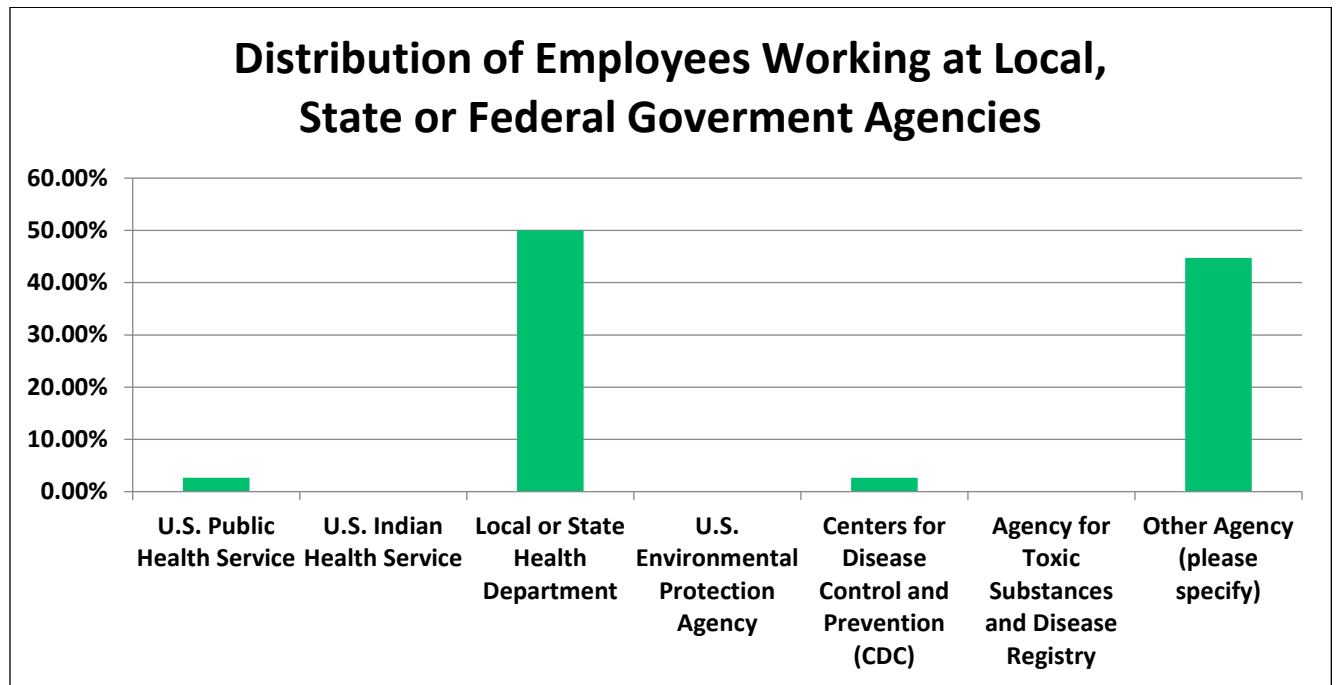


Chart 10

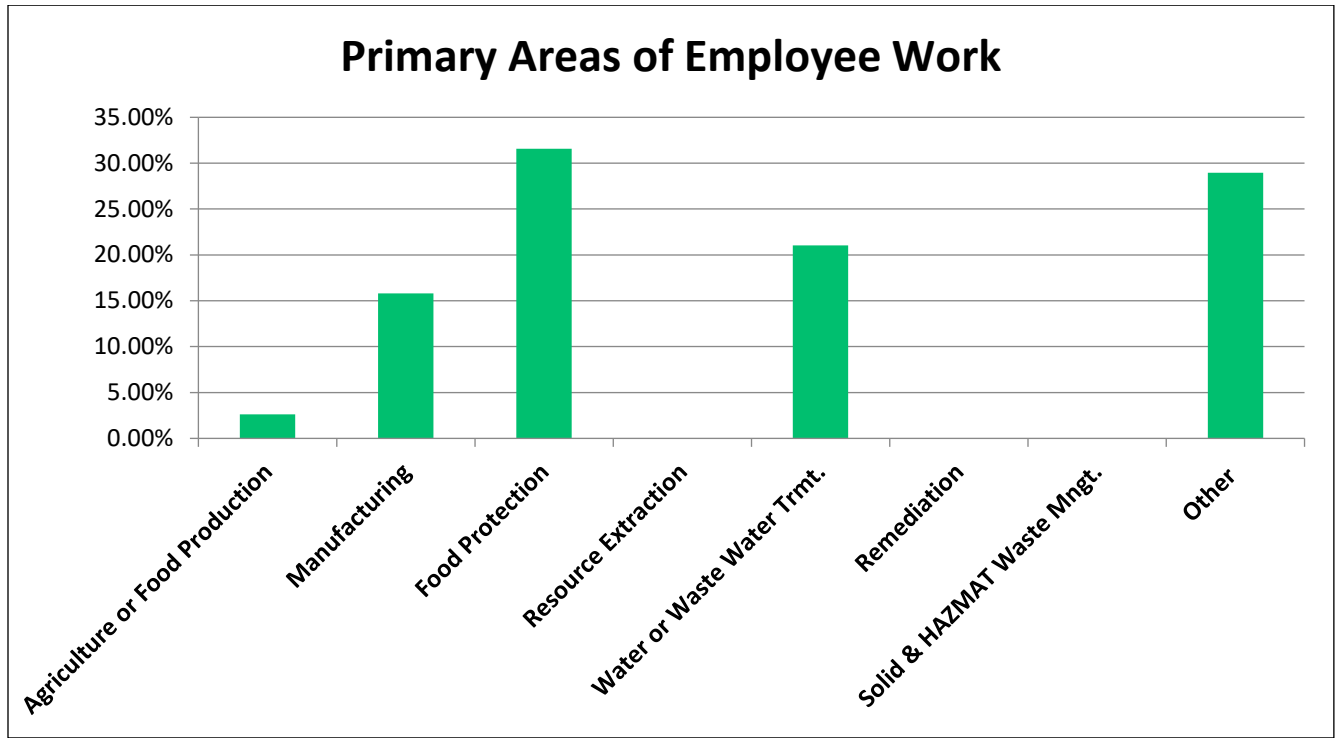
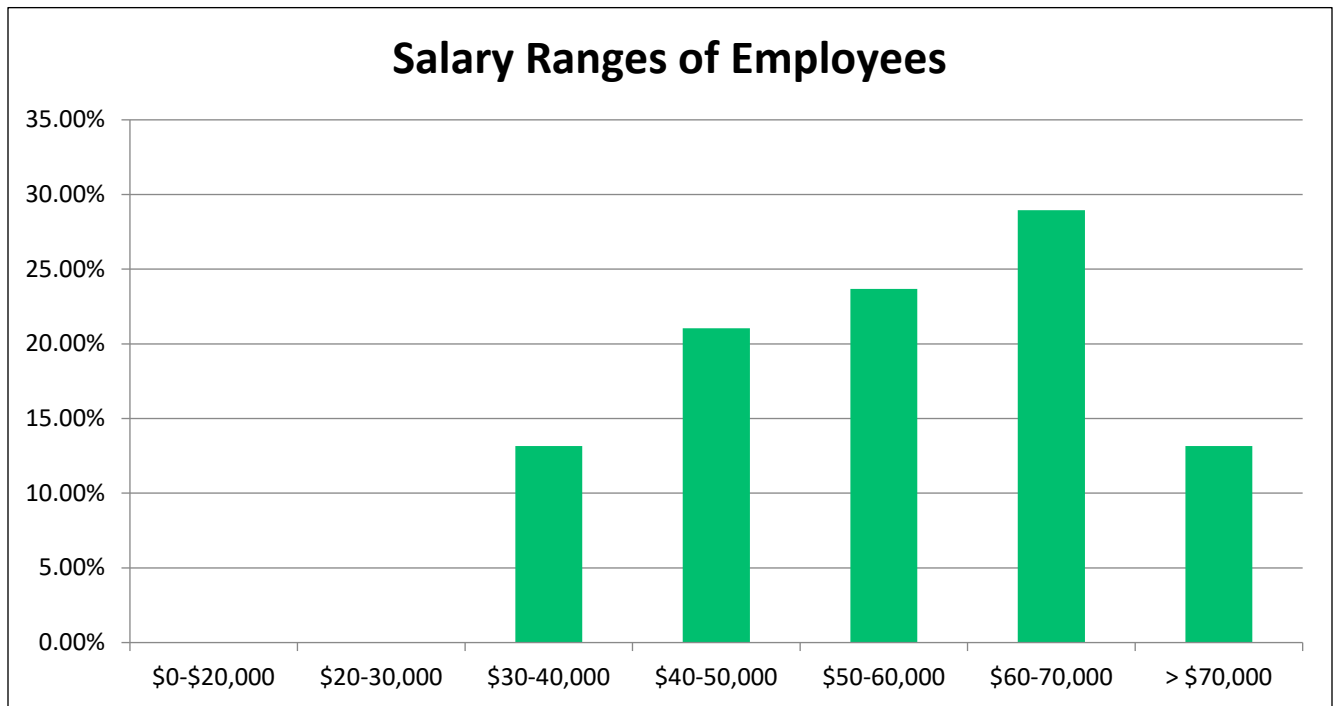


Chart 11



E. Employee Data on Continuing Education and Professional Development

Table 3 shows the graduate degrees that have been achieved or are being pursued by employees.

Table 3 Continuing Education

Master Degree Being Pursued	Degree Program
Master of Science	Public Health
Master of Science	Occupational and Environmental Health
Master of Science	Vector Borne Disease Biology
Master	Land and Water Systems
Master	Public Health
Enrolled in Master Program	Name of Program not reported

F. Professional Recognition

Employees report attaining the following professional certifications (Table 4):

Table 4 Professional Recognitions

Professional Recognitions
NCPHA Scholarship, FDA Standardized , Health Department Employee of the Year, NC recognition for response and assistance after hurricane
NEHA Graduate Scholarship Recipient in 2019
Annual Minnesota Governor’s Safety Awards for Represented Site
CDC MMWR Co-Author, CDC MMWR Acknowledgement, NorthStar Scholarship

G. Credentials Achieved

Employees report achieving the following professional credentials (Table 5):

Table 5 Certifications

Certifications	Total
40 Hour HAZWOPER	2
ASP	1
Certified Chemical Hygiene Officer (CCSO)	1
Certified Food Protection Manager	1
Certified Occupational Safety Specialist (COSS)	1
Certified Pesticide Applicator – Special Application of Solid Mosquito Larvicides Training	1
Certified Forklift Operatory	1
Certified Safety Professional	1
City and Counties of Denver Green Belt Certification for Innovations in the Workplace Compliance and Enforcement	1

Confined Space Competent Person	2
DOT HAZMAT	1
eRailSafe contractor Train the Trainer – Trenching/Excavations	1
Essentials for Healthy Homes	1
FDA Standardized Inspection Officer	2
First Aid/CPR/AED Level 1 Instructor	1
Food, Lodging, and Institutions	1
HAZMAT Certificate	1
Health Specialist	1
IATF 16949	1
ISO 9001 auditor	1
LOTOTO train the trainer –	1
Crain/Hoist Train the Trainer	1
Onsite Water Protection for Private Drinking Water Wells – Intern training and Authorization	1
OSHA – 30 hour	2
OSHA 1910 – 30 hour	1
OSHA 1926 – 30 hour	1
OSHA 510 Construction and General Industry	1
Powered Industrial Truck Train the Trainer	1
Practitioners Property Maintenance Code	1
Rabies Control Program Certificate	1
TapRoot Cause Analysis	1
Trenching and Excavating Competent Person	1
Radiation Safety Officer	1
REHS	6
REHS Lead Risk Inspector	1
Servsafe Instructor/Proctor	1
USACE Safety & Health	1
Water Operator – Class C, D, E	1
Waste Water Authorization	1

V. Supervisor Survey Results

Supervisors of employees/graduates of 2022-2023 reaccrediting programs were asked to assess the skills and preparedness of their employees. Fourteen supervisors responded to the survey and their responses are presented below along with information related to their job sector and primary areas of work.

A. Supervisor Employment

Charts 12 and 13 present data related to the area of supervisor employment. Supervisors working for local or federal government agencies represent the majority of respondents followed by those working in private companies or corporations and educational institutions. Chart 13 shows those supervisors working for government agencies fall mainly within local or state health departments.

Chart 14 shows data somewhat similar to those of employees, with water or waste water management, food protection, and manufacturing at the top of the employment area list. The “other” category for job area descriptions included:

- Animal Research
- Body Art
- Code Enforcement for Human Habitation
- Groundwater Protection
- Medical
- Nuisance and other complaints
- Public Health
- Radon
- Recreational Waters
- Research Occupational Safety
- School of Medicine
- Vector Control
- Tanning

Chart 12

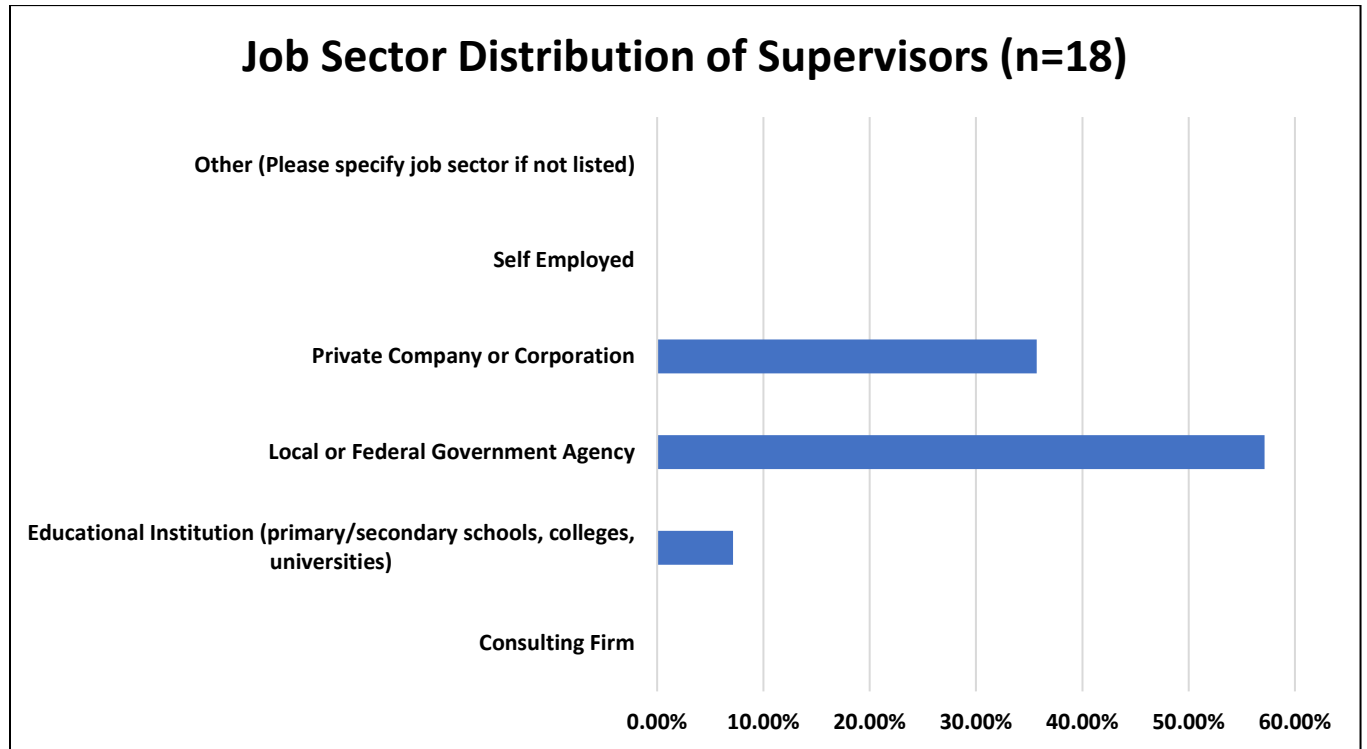


Chart 13

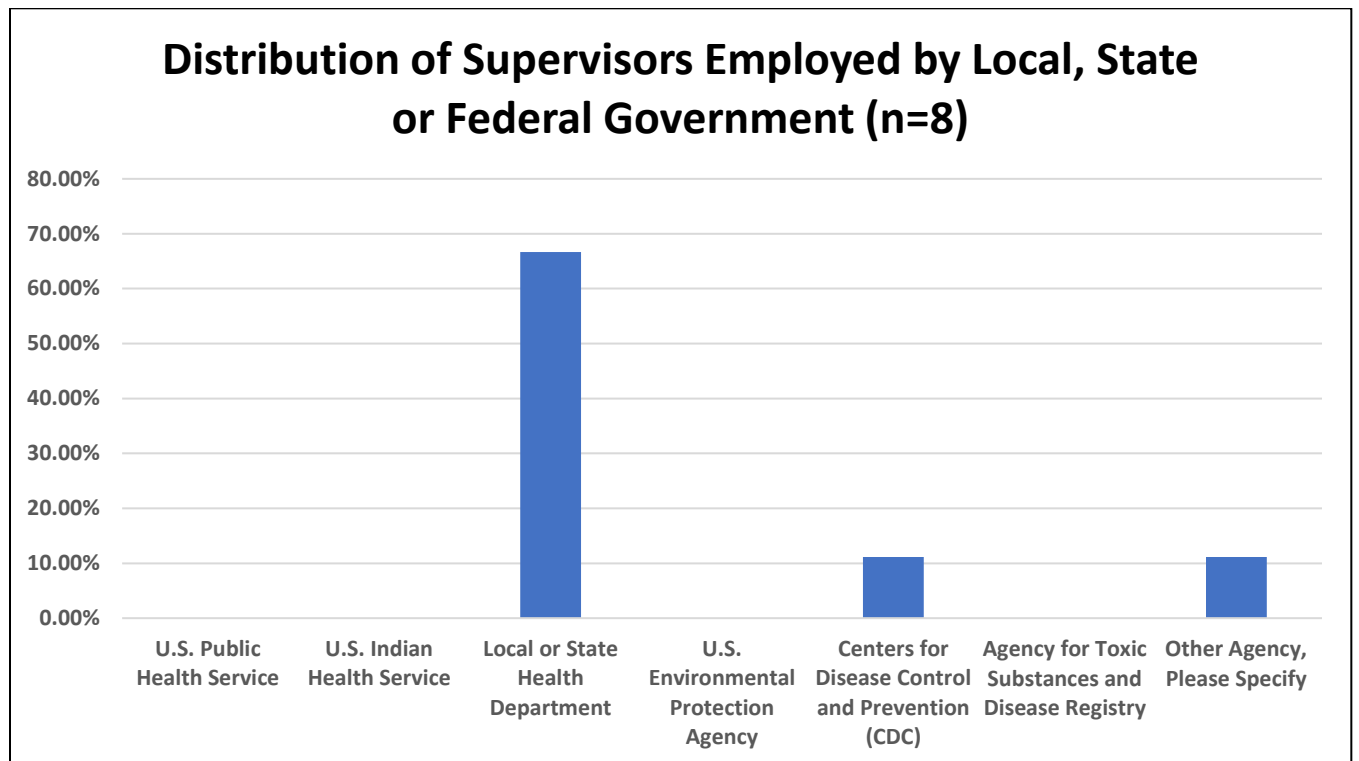
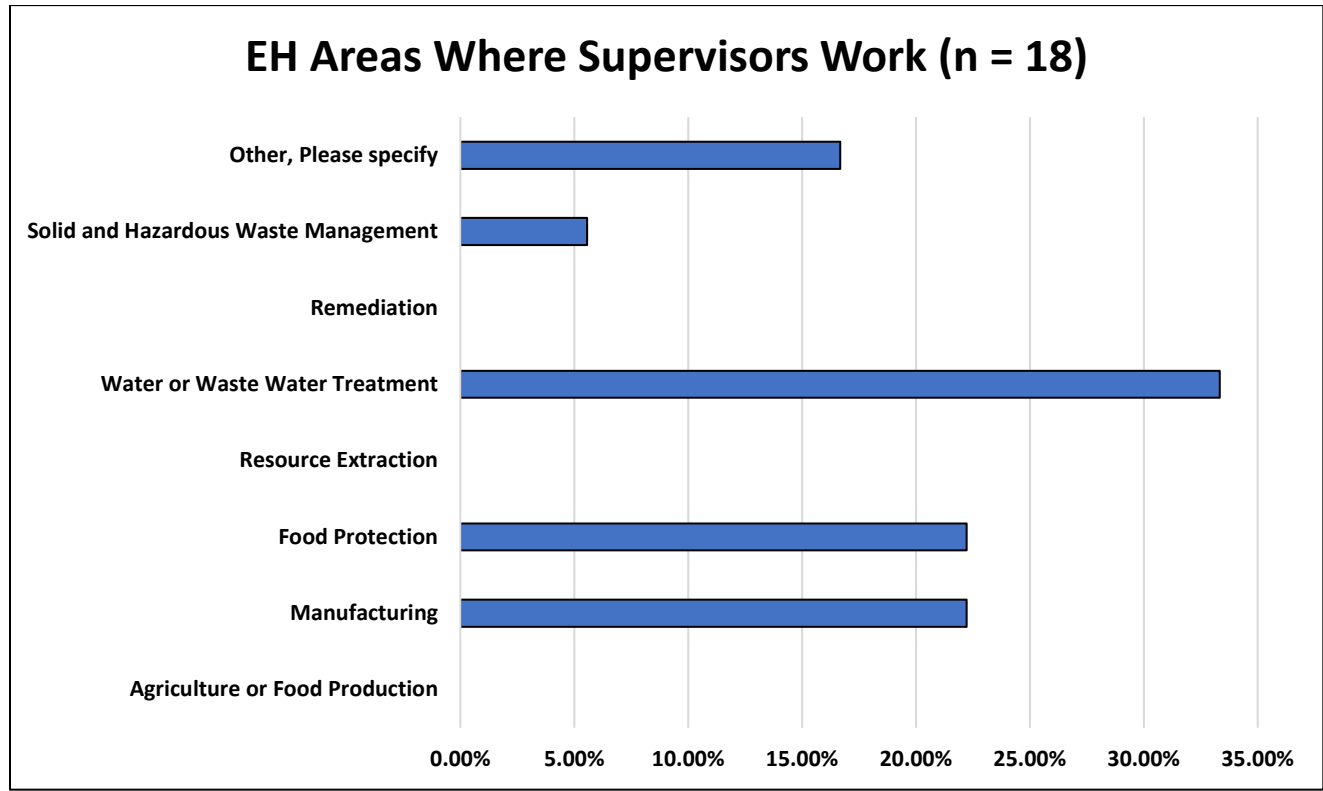


Chart 14



B. Supervisor Rating of Employee Skills

Supervisors responded to questions regarding the skill levels of their employees. Please note that there were 13, rather than 14 Supervisors responding to this section of the survey. Charts 15-17 present supervisor estimates of employee acumen related to job skills, interpersonal skills, skills related to interpreting data, as well as employee proficiency in EH Specific Areas.

Supervisors reported moderate to high proficiency levels for all Information skills categories, with technical writing and public speaking categories showing minor challenges (Chart 15). Interpersonal skills and skills related to interpreting and reporting data were generally rated “proficient” or higher by supervisors (Charts 16 and 17), with some challenges cited for the leadership, time management, project planning categories, organizing work flow, and conducting a statistical analysis and interpreting data.

Where applicable, supervisors reported strong skills in EH Specific Areas, including risk assessment, communication, and management, followed by toxicology and epidemiology (Chart 18). However, fifty-five percent of supervisors found epidemiology non-applicable, while 36 % of supervisors found toxicology non-applicable to their employees’ positions.

Chart 15

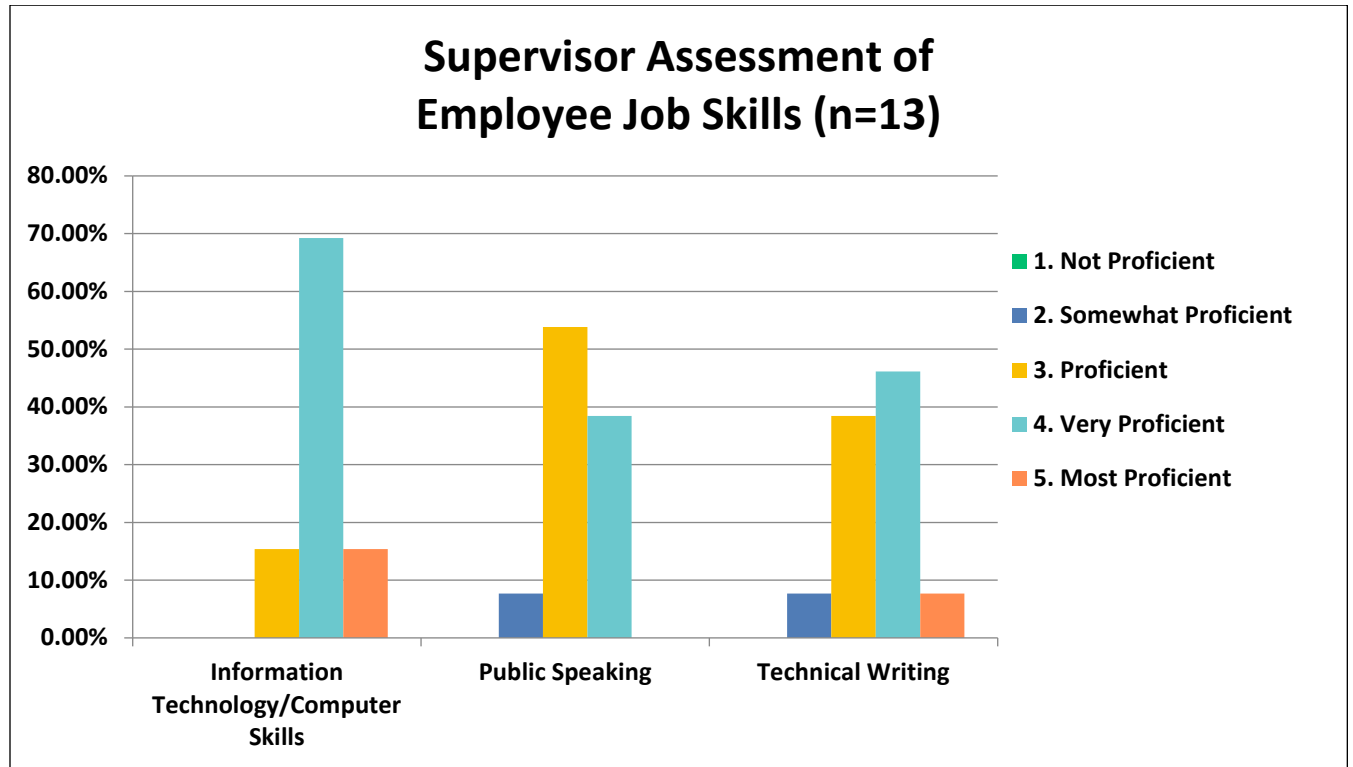


Chart 16

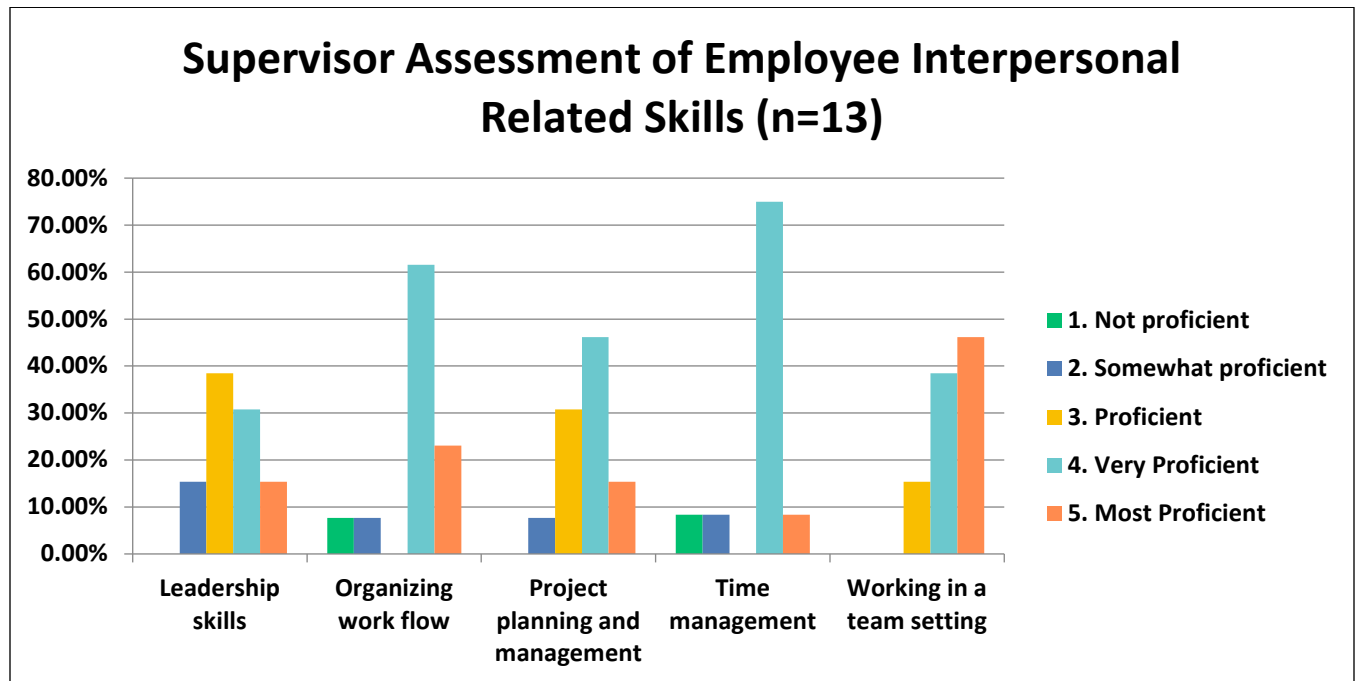


Chart 17

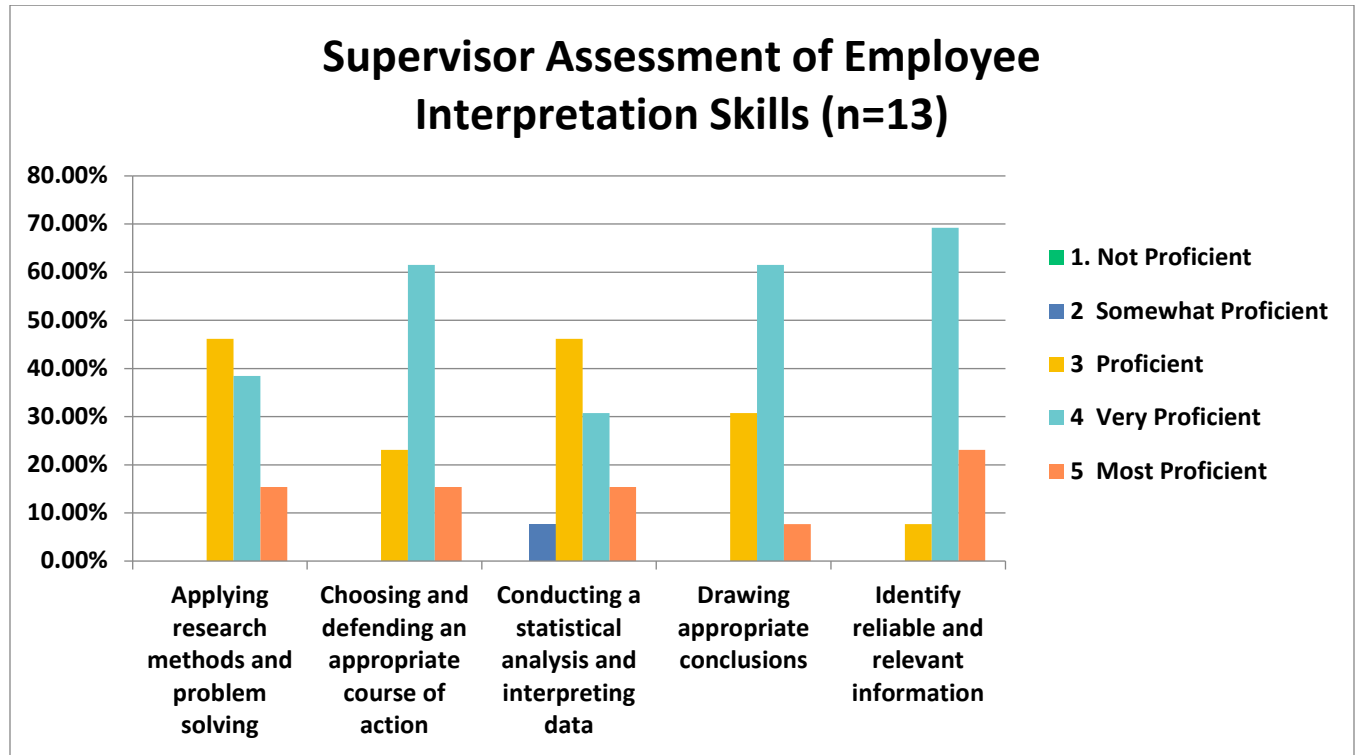
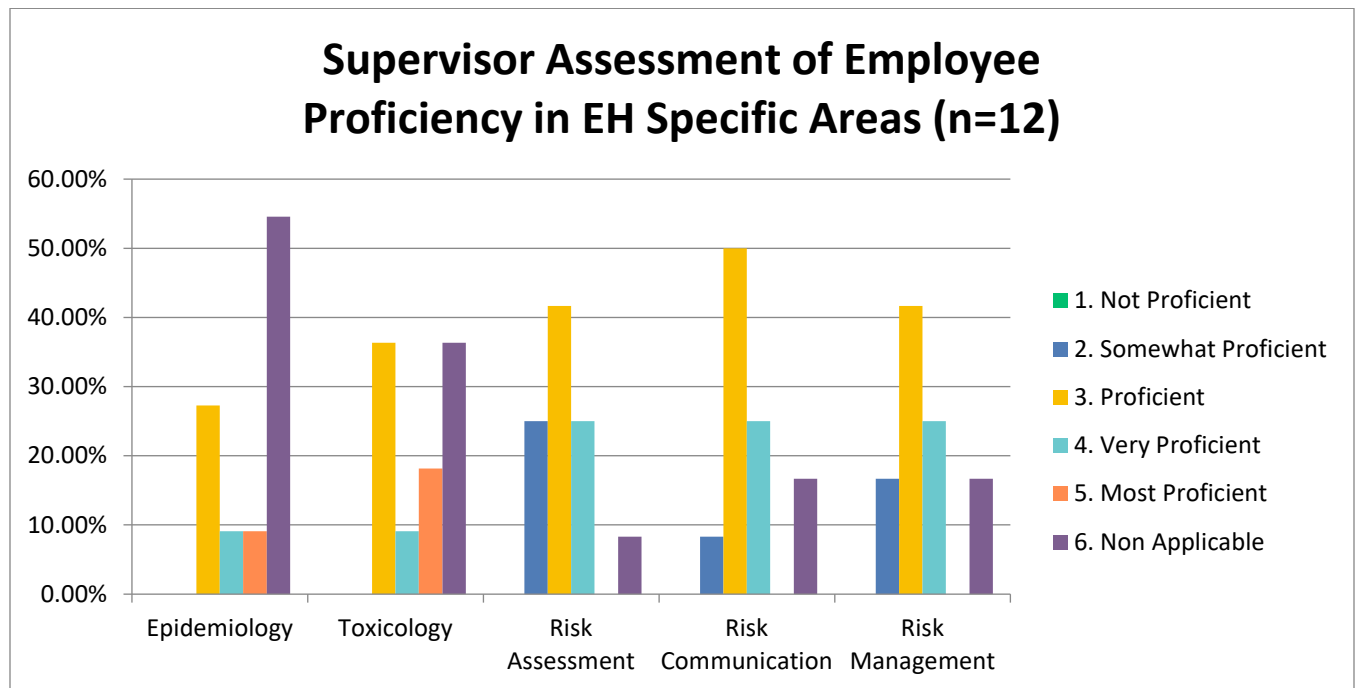


Chart 18



C. Specialty Area Requirements of Jobs

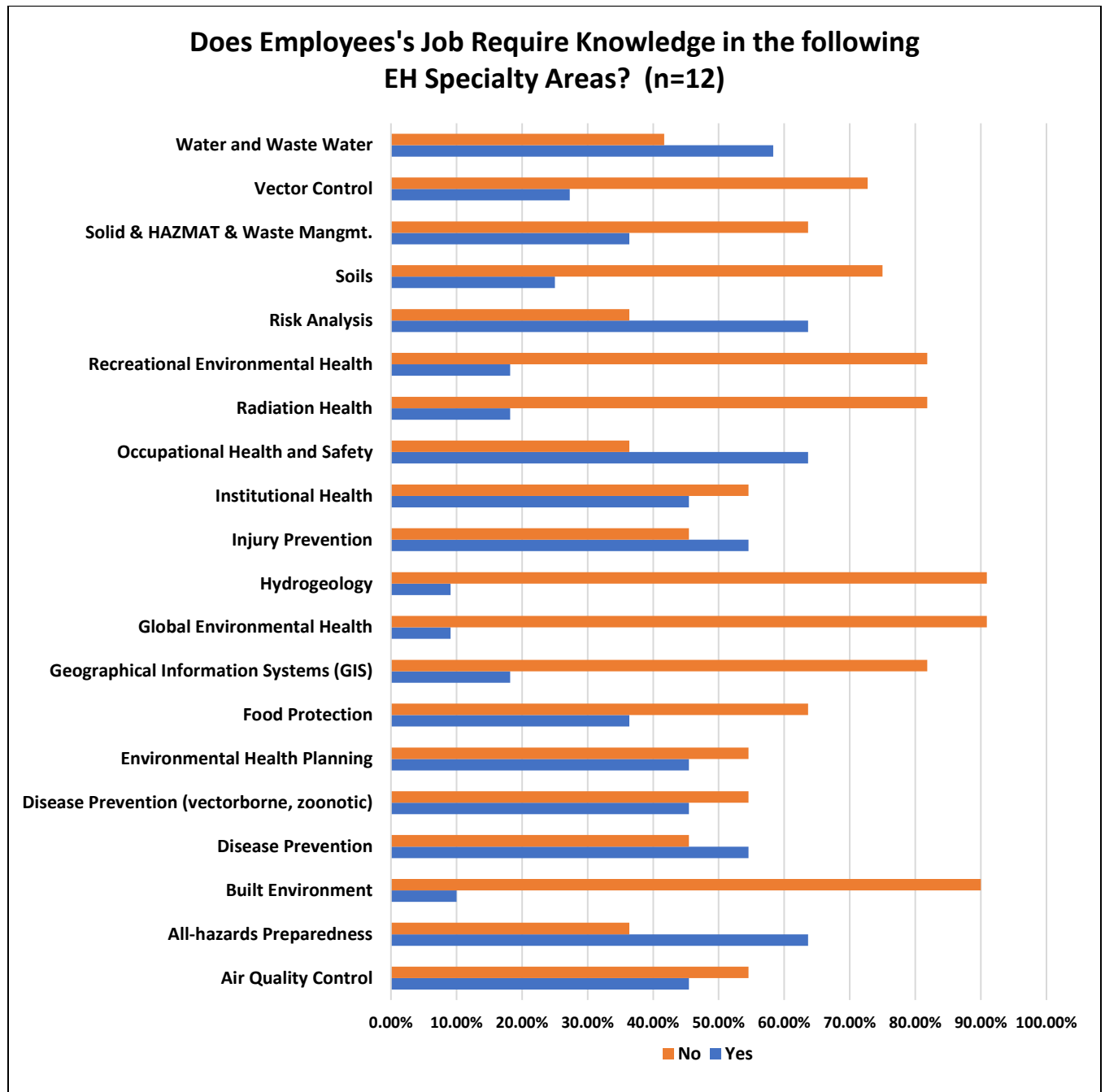
Supervisors were asked to answer “Yes” or “No” if the employee’s job requires knowledge in several EH relevant core competencies. Chart 19 shows that fifty percent or more supervisors cite the following required knowledge areas for their employees (required knowledge areas also cited by employees are starred (Chart 5) (listed from most cited to least):

- All-hazards Preparedness*
- Occupational Health and Safety*
- Risk Analysis*
- Water and Waste Water*
- Disease Prevention*
- Injury Prevention*

EH Specialty areas that 50% or more supervisors reported as *not* requiring employee knowledge included (unrequired knowledge areas also cited by employees are starred (Chart 5) listed from most cited to least cited):

- Hydrogeology*
- Global Environmental Health*
- Built Environment
- Recreation Environmental Health*
- Radiation Health*
- Geographical Information Systems (GIS)*
- Soils*
- Vector Control
- Solid and HAZMAT and Waste Management
- Food Protection
- Institutional Health
- Environmental Health Planning
- Disease Prevention (vectorborne, zoonotic)
- Air Quality Control*

Chart 19



D. Program Preparation

Supervisors were asked to answer “Yes” or “No” if employees were “well prepared” in the following EH relevant Specialty Areas. All supervisors rated employees as “somewhat” or “well prepared” with the exception of those categories not required by or not applicable to job descriptions (Chart 20). EH work areas scored well prepared by 50% of more of the supervisor

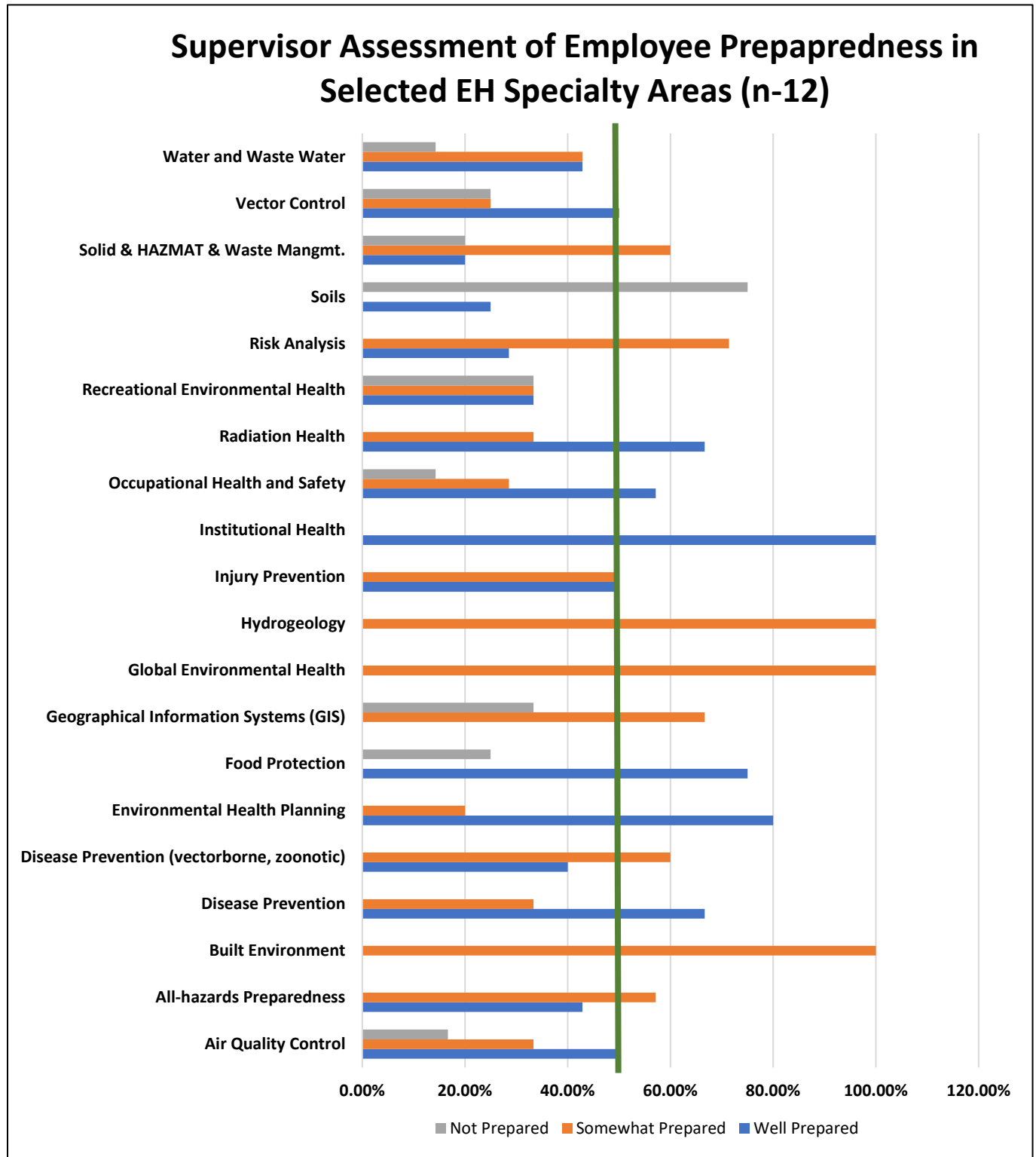
respondents include: (those work areas scored similarly by employees are starred (Chart 6) (listed from most cited to least cited):

- Institutional Health*
- Environmental Health Planning*
- Food Protection*
- Disease Prevention*
- Radiation Health
- Occupational Health and Safety*
- Air Quality Control*
- Injury Prevention*
- Vector Control*

EH Specialty areas showing one to four supervisors reporting that employees are not prepared include (those work areas scored similarly by employees are starred) (areas listed from highest to lowest percentage):

- Soils*
- Geographic Informational Systems (GIS)*
- Recreational Environmental Health
- Food Protection
- Vector Control
- Solid and HAZMAT and Waste Management
- Air Quality Control
- Occupational Health and Safety
- Water and Waste Water

Chart 20



E. Additional Specialty Areas Knowledge Needed

No additional Knowledge areas were deemed necessary by Supervisor respondents.

VI. Narrative and Discussion

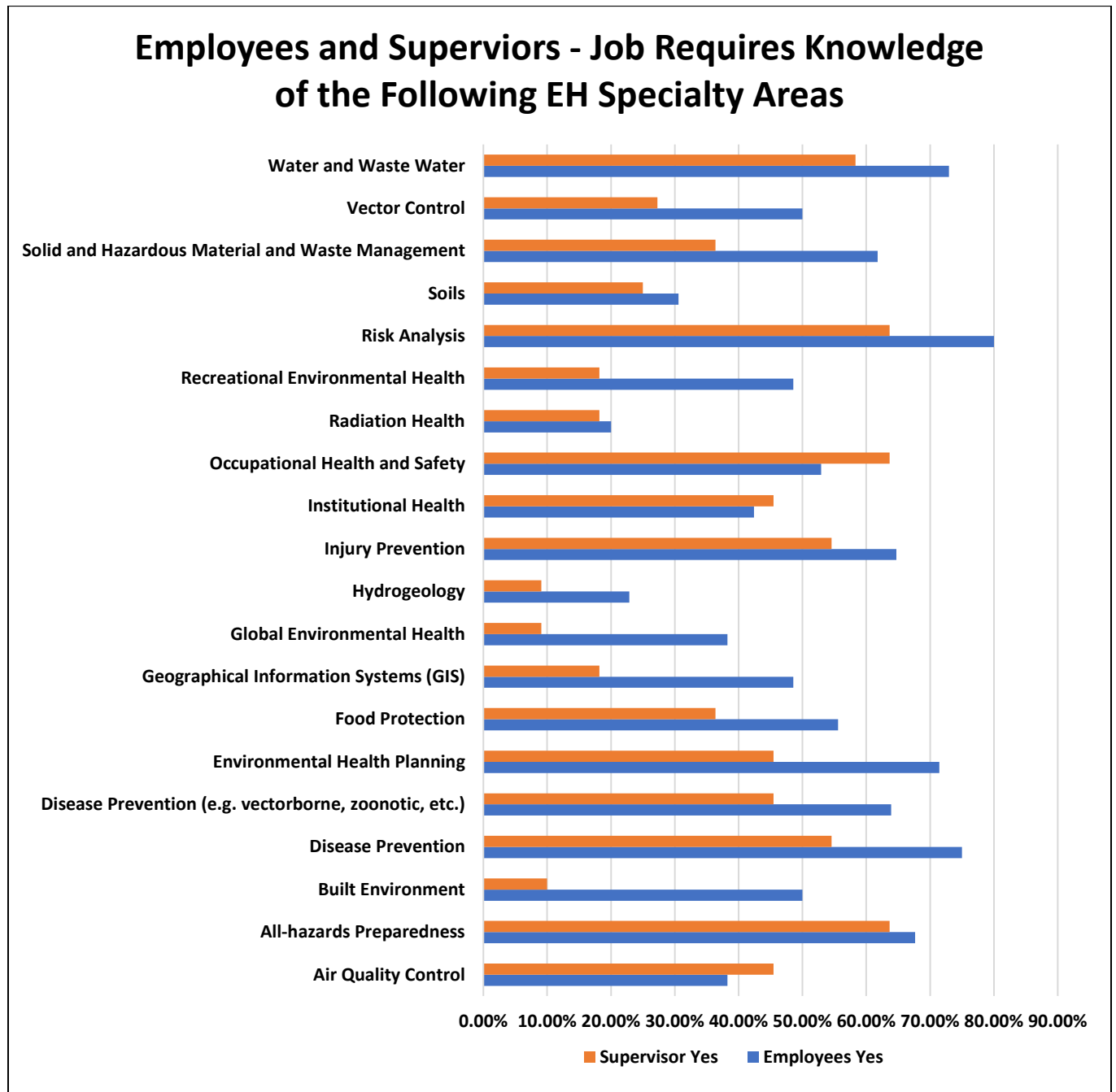
EHAC accredits EH academic programs in order to create a cadre of educational degree programs that produce EH graduates who are well prepared academically and have the fundamental and practical skills to successfully enter and thrive in the EH field. EHAC's primary mission is to enhance the education and training of students in EH science and protection by ensuring that students receive premium quality education and training from EHAC accredited degree programs.

A. EH Specialty Knowledge Areas

Supervisor and employee assessments of the need for knowledge of particular EH Specialty Areas varied, however 50% or more of both groups agreed on the following areas (Chart 21):

- Water and Waste Water
- Risk Analysis
- Occupational Health and Safety
- Injury Prevention
- Disease Prevention
- All-hazards Preparedness

Chart 21



B. EH Specialty Area Preparedness

The aggregation of supervisor and employee assessments regarding preparedness shows employees are graduating with an overall favorable preparedness level for their current jobs (Charts 22 and 23). The majority of all supervisor ratings of employee preparedness fell within the “somewhat” to “well” prepared categories, with similar self-ratings by former

students. Highest levels of preparedness that were reported by 50% or more employees and supervisors include the following specialty areas:

- Vector Control
- Occupational Health and Safety
- Institutional Health
- Injury Prevention
- Food Protection
- Environmental health Planning
- Disease Prevention
- Air Quality Control

Chart 22

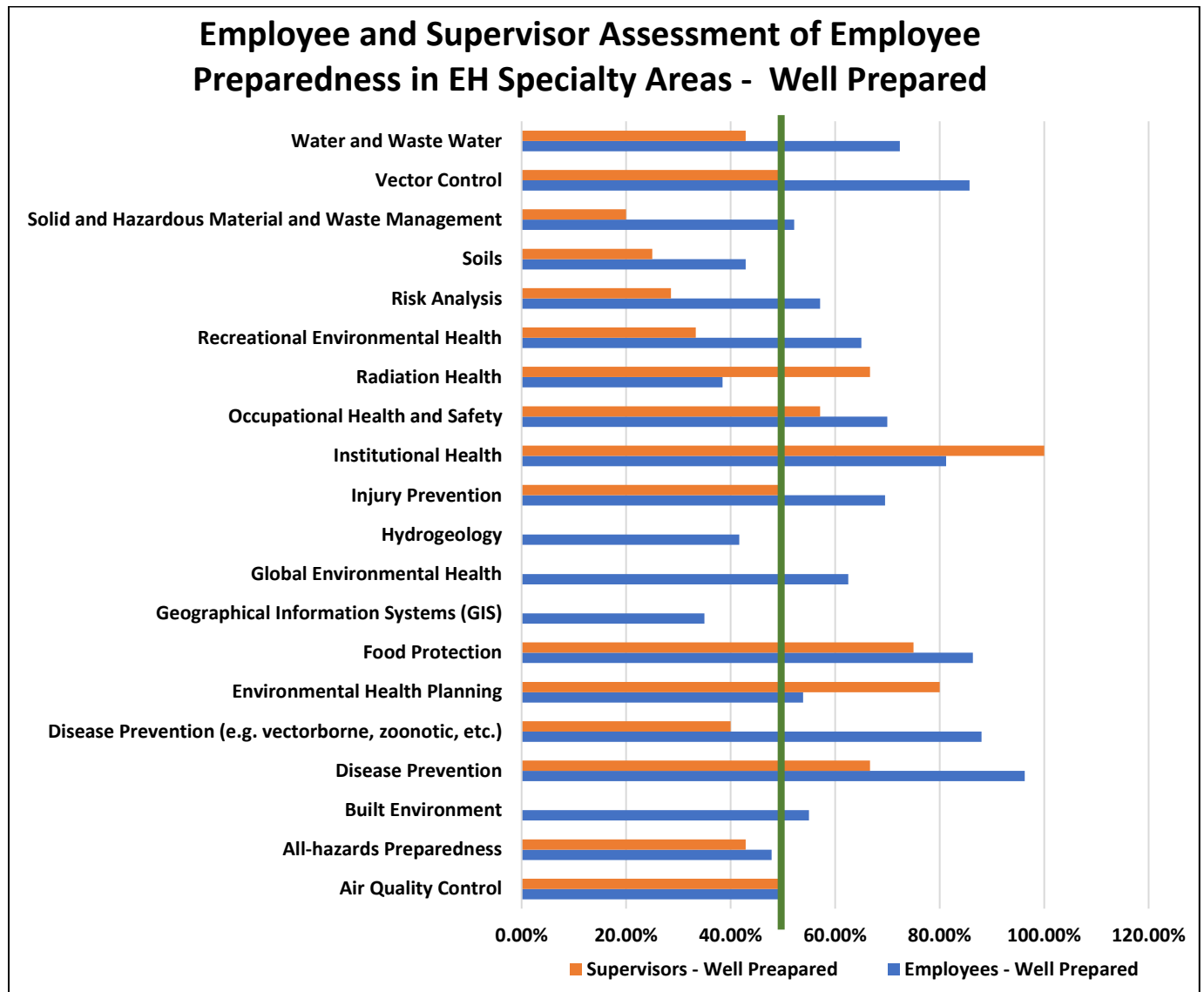
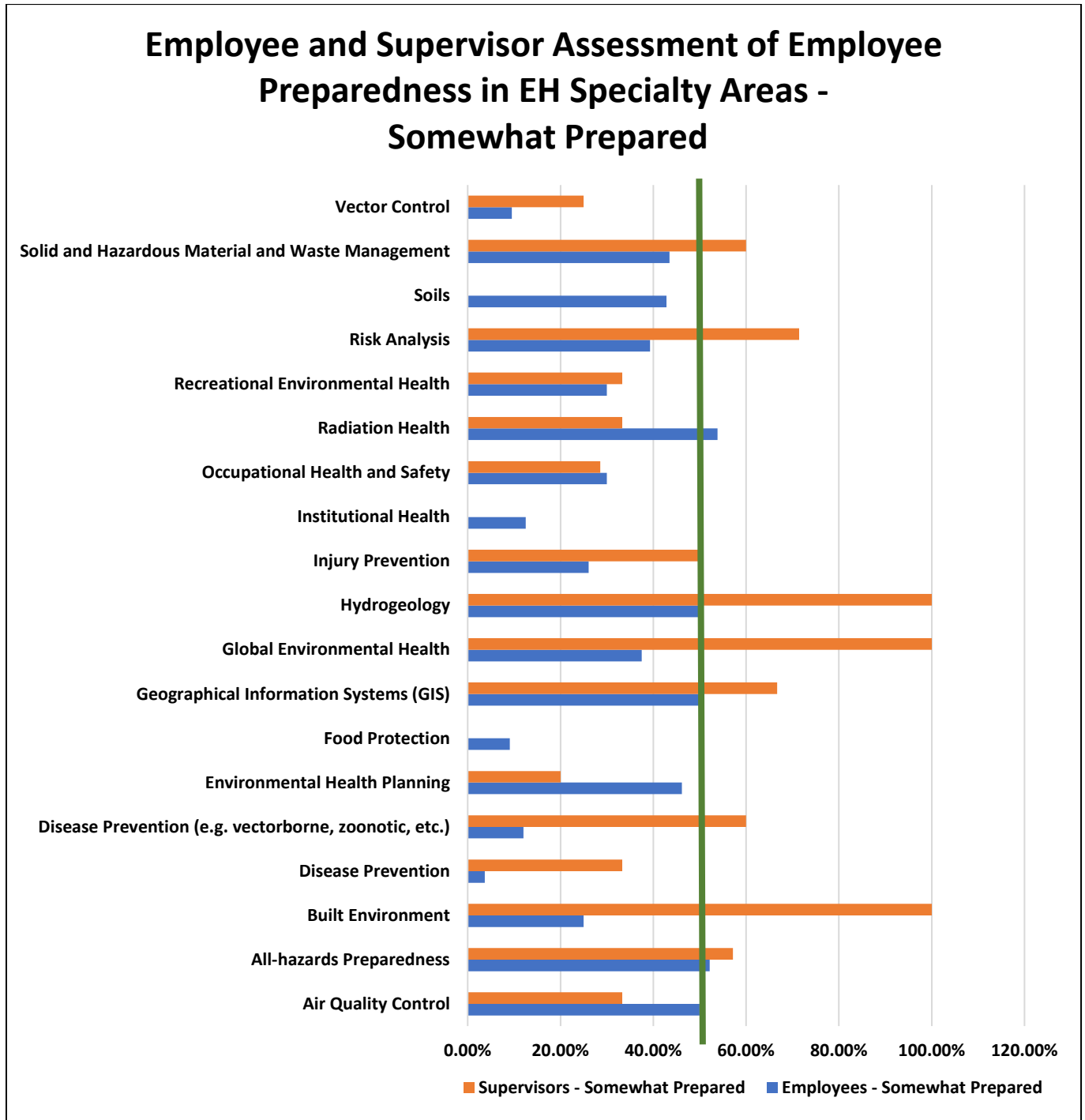


Chart 23



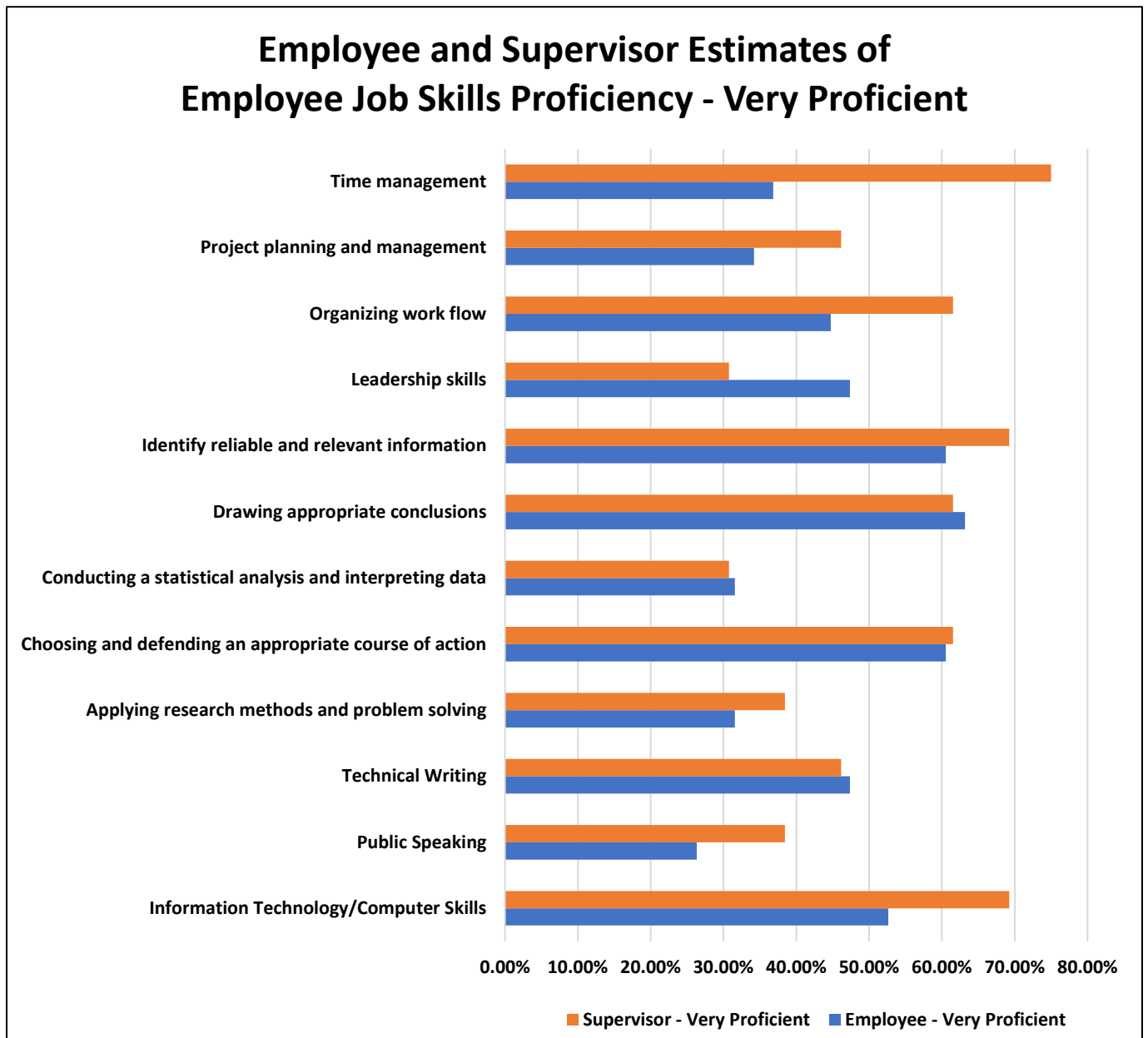
C. Job Skills Assessments

Similar satisfaction levels exist for both employees and supervisors regarding employee skill levels in different EH job areas. Employees tended to rate their skills a bit higher than the

Supervisors. Fifty percent or more supervisors and employees found agreement in the following EH specialty areas, which were given a rating of “Very Proficient” (Chart 24):

- Choosing and Defending an Appropriate Course of Action
- Time Management
- Drawing Appropriate Conclusions
- Identifying Reliable and Relevant Information
- Information Technology/Computer Skills

Chart 24



D. Proficiency Levels in EH Specific Areas

Lastly, employee and supervisor ratings of employee proficiency levels in EH Specific Areas found similarities, as well. Generally, supervisors found employees “Very Proficient or Proficient” in EH Specific Areas while employees largely rated themselves as “Very Proficient” (Charts 25 and 26).

There is some disagreement between supervisors and employees regarding the applicability of EH Specific Areas to employee positions. Chart 27 shows more than 50% of Supervisors found epidemiology applicable, 36% found Toxicology applicable with less than 20% finding the risk areas applicable to job descriptions. Only 11% of Employees found Toxicology and Epidemiology application to their job, while less than three percent found the risk categories applicable to their work (Chart 27).

Chart 25

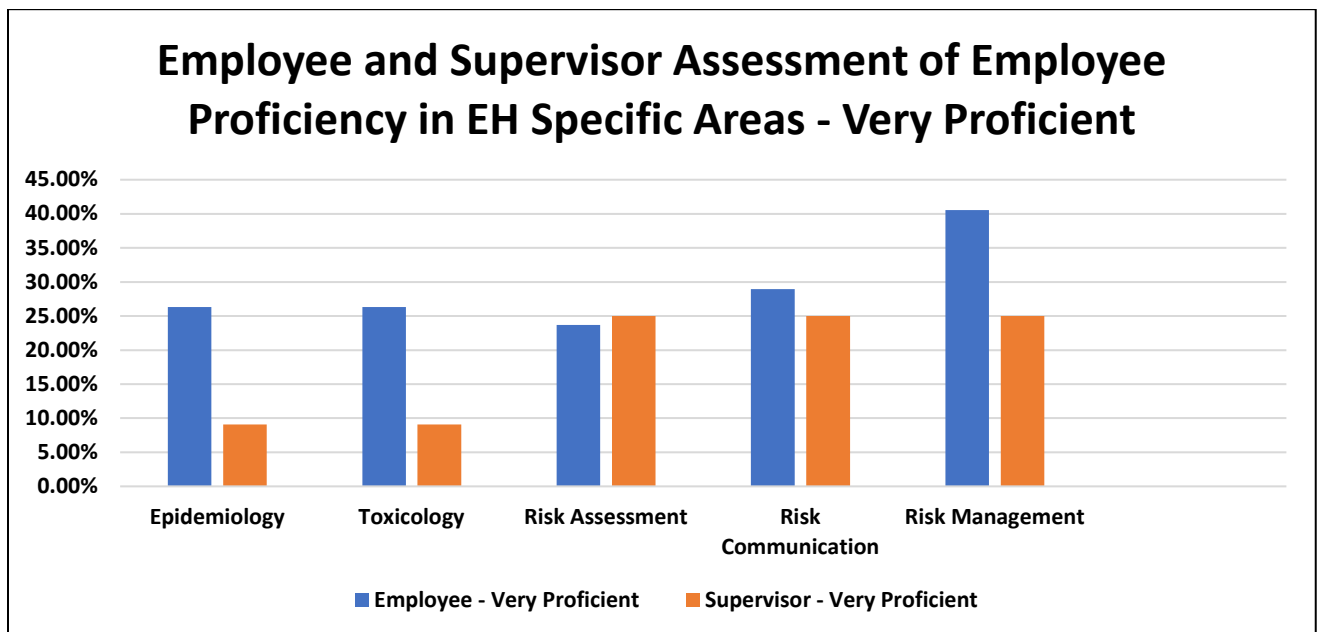


Chart 26

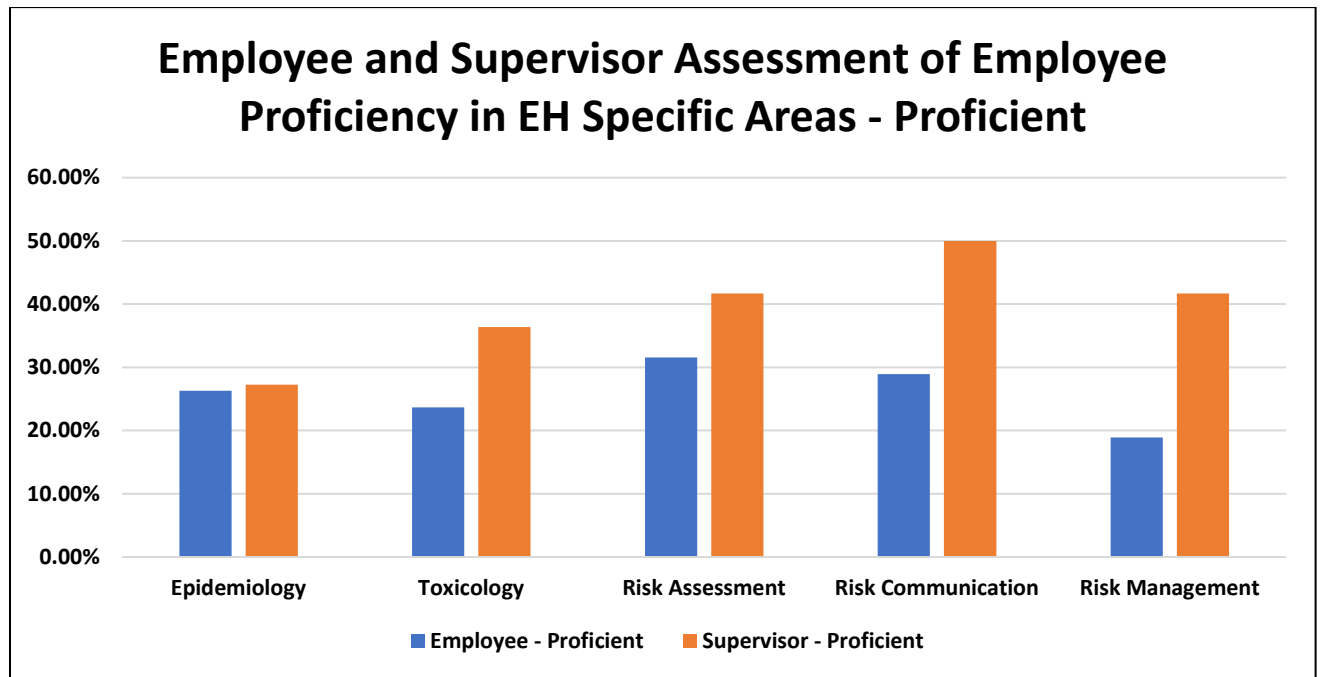


Chart 27

