Job Task Analysis Report
Landscape Architects
Submitted to
The Council of Landscape Architectural Registration Boards (CLARB)

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CLARB

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Overview

> *Licensing candidates in a profession, selecting the best employees, or increasing the professionalization of individuals through voluntary certification are challenges met by the application of accurate measures of knowledge, skills, and abilities.*

In October 2021 the Council of Landscape Architectural Registration Boards began a six-month job task analysis. The job task analysis involved two focus groups meeting with a different group of Landscape Architects at each focus group, followed by a large-scale validation survey. Following the close of the survey, a third focus group of Landscape Architects met to finalize examination blueprints, including exam length and seat time.

In total, over 3,500 subject matter experts across North America participated in the job task analysis. This report presents a detailed description of the process, as well as the results of the job task analysis.

Table of Contents

List of Tables

List of Figures

Introduction

Job or task analysis is the process or procedure for analyzing the tasks performed by individuals in an occupation, as well as the knowledge, skills, and abilities required to perform those tasks. Specifically, job analysis can be defined as "any systematic procedure for collecting and analyzing job-related information to meet a particular purpose" (Raymond, 2001, p. 372). Job analysis can be used for multiple purposes including, but not limited to, job description, job classification, job evaluation, performance appraisal, training, worker mobility, workforce planning, efficiency, safety, and legal and quasi-legal requirements (Brannick, Levine, & Morgeson, 2007). Job analysis is traditionally used by secondary and post-secondary educators, business or industry trainers, government or military trainers, and test developers. Although there are multiple methods for conducting job or task analyses, for this job task analysis, a variation on the DACUM method was used.

Methods

Job Task Analysis Process Overview

A job analysis or task analysis is a foundational requirement of any valid credentialing program and helps to identify the core knowledge areas, critical work functions, and/or skills that are common across a representative sampling of current practitioners or job incumbent workers. Empirical results from the task analysis provide examinees and the public the basis of a valid, reliable, fair, and realistic assessment that reflects the skills, knowledge, and abilities required for competent job performance. The services of Professional Testing were secured to complete an updated job task analysis for Landscape Architects for The Council of Landscape Architectural Registration Boards (CLARB).

CLARB contracted with Professional Testing, who utilized knowledge of subject matter experts (SMEs) and Psychometricians with expertise in job task analysis to prepare a comprehensive list of duties and tasks performed by Landscape Architects, along with the corresponding knowledge, skills, and abilities (KSAs) required of Landscape Architects. The process used for this job task analysis was a variation of the DACUM method.

The task analysis began in October, 2021 and concluded in April, 2022.

DACUM Method

Focus Group One

The first focus group met for two and a half days in person in Denver, Colorado October 22-24, 2021. There were eight SMEs involved in the first focus group. The SMEs were hand selected by CLARB based on the type of work that they do, the number of years they have been practicing in the industry, and their geographic location. A list of participants is included in Table 1.

Table 1: Focus Group One Participants

Participant	Company and Title	Geographic Location
Devon Blosh	Confluence, Associate	Des Moines, Iowa
Kalle Butler-Waterhouse	REAL School Gardens, Project Manager, Garden Design and Build	Atlanta, Georgia
Rebecca de Boer	Ken Saiki Design, Senior Landscape Architect and Project Manager	Madison, Wisconsin
Peter Fernandez	Carter van Dyke Associates, President and Managing Partner	Doylestown, Pennsylvania
Steven Johnson	Sitework Studios PLLC, Owner/Partner	Ashville, North Carolina
Fei Peng	Terrain Studio, Inc, Landscape Designer	San Francisco, California
Mark Taylor	The Architerra Group, Inc, Principal	Denver, Colorado
Stephen Watt	Registered Landscape Architect	Vancouver, Canada

The meeting began with an introduction to Job Task Analyses, followed by a brainstorming session regarding the big picture areas of work completed by Landscape Architects. Next, the participants identified all job duties associated the profession of Landscape Architecture followed by all corresponding tasks within each duty.

The meeting ended with the SMEs engaging in a lengthy discussion about how the identified duties and tasks should map to a series of exams. The goals was not to finalize the number and length of exams, but rather to determine if the total number of exams associated with the Landscape Architecture Registration Exam (L.A.R.E.) could remain four sections or if it should be increased or decreased to either five or three sections.

Focus Group Two

The second focus group met for two and a half days in person in Denver, Colorado on October December 10-12th, 2021. There were eight different SMEs involved in the second focus group. Like the previous focus group, the SMEs were hand selected by CLARB based on the previously identified factors. A list of participants is included in Table 2.

Table 2: Focus Group Two Participants

Participant	Company and Title	Geographic Location
Jennifer Cristobal	Michael Baker, Senior Planning Manager	Pittsburgh, Pennsylvania
Erin Degutis	Duke Energy Corporation, Senior Transmission Siting Manager	Charlotte, North Carolina
Brian Gyory	NYS Environmental Facilities Corporation, Green Infrastructure Coordinator	Saratoga Springs, New York
Sandra Nelson	Landscape Architect	Fort Collins, Colorado
Bryce Olberding	Architects West, Inc., Landscape Architect	Post Falls, Idaho
Will Packolyk	EDA Planning + Urban Design, Landscape Architect	Edmonton, Alberta, Canada
Joseph Steffes	MESA Design Group, Associate Principal	Dallas, Texas
Gaylan Williams	Design Workshop, Urban Designer	New Orleans, Louisiana

The meeting began with an introduction to Job Task Analyses, followed by an overview of the work completed by the previous focus group. The primary goal of the second focus group was to identify the knowledge, skills, and abilities required to perform the identified job tasks, as well as the tools, equipment, and other resources used to perform the job tasks. Throughout the process, the participants also had discussions about adding, removing, or modifying previously identified duties and tasks for clarification purposes.

The meeting ended with the SMEs continuing the discussion about how the identified duties and tasks should map to a series of exams. The second focus group was allowed to make modifications to the work the previous focus group had completed. Lastly, participants talked about the validation survey and provided input into demographic questions and the distribution plan for the survey.

Validation Survey

An online survey was drafted to validate the results of the previous two focus groups and to see if any identified duties and tasks were missing. It was administered between January and March, of 2022. Professional Testing used an online survey software system to administer the survey.

Survey invitations were sent to all CLARB, ASLA, and CELA members. There were also links to the survey posted on CLARB's website and social media (e.g., Facebook, Twitter). Any device with an internet connection could be used to access the survey.

Survey participants received a direct email from CLARB describing the purpose for the online survey and inviting those members to participate. The email requested input regarding the job tasks routinely performed by landscape architects. The survey participants were directed to the survey website to complete the survey. The online survey consisted of approximately 115 job task statements addressing professional duties performed by landscape architects.

Development of Task Rating Scales for the Online Validation Survey

The first step in developing the online validation survey is to identify the rating scales with which survey participants will rate the tasks performed by a landscape architect. There are multiple models of rating scales used in job analyses; however, for the purposes of this study, two survey scales were used: task frequency and criticality.

Task frequency is simply how frequency each task is performed. It was chosen because, as identified in Newman, Slaughter, & Taranath, those tasks that are performed more often should have a higher emphasis placed on them (1999). Task criticality, however, is defined as the potential for public harm if the task is performed incorrectly or not at all. As Shimberg stated, "tests used for licensing must be able to help identify those who possess the knowledge, skills, and abilities to perform critical tasks in a manner that will adequately safeguard the public health, safety, and welfare" (1981, p. 1140). The levels of each of the two rating scales are illustrated below:

Frequency	Criticality
Perform Very Often – 4	Serious or severe harm – 2
Perform Fairly Often – 3	Moderate level of harm – 1
Occasionally Perform – 2	Little or no harm – 0
Seldom Perform – 1	
Never Perform – 0	

Development of Demographic Questions for the Online Validation Survey

The second step in developing the online validation survey is to identify key demographic questions to ensure the representativeness of survey respondents and help evaluate possible threats to the validity of survey responses. Participants from the second focus group, along with input from CLARB and Professional Testing, identified the following demographic questions:

- Do you primarily work, teach, or study landscape architecture in the United States, or Canada?
- Are you a licensed or registered landscape architect?
- How long have you been licensed or registered?
- How many licenses or registrations do you currently hold?
- Which of the following BEST describes where you currently are in your landscape architecture career?
- How long have you been working in landscape architecture?
- If you practice internationally, in which regions do you practice?
- Please indicate your level of education?
- How old are you?
- What is your gender?
- Which ethnicity best describes you?
- What is the size of the organization in which you work?
- In which location do you reside?
- In which sector are you currently or were most recently practicing?
- [If participants said they worked in a private firm]
    - In which type of firm do you work?
    - What is your role in the organization in which you work?
    - Are you currently an adjunct faculty member?
- [If participants said they worked in a public agency]
    - In which type of department do you work?
    - At which governmental level do you work?
    - Are you currently an adjunct faculty member?
- [If participants said they are students/recent graduates]

  - What program of study are you currently enrolled or recently graduate from?
  - What year are you in your program?
- [If participants said they worked in an academic setting]
  - Do you also practice outside of the educational setting in which you work?
  - Which of the following projects do you perform as a landscape architect?

A copy of the survey can be found in Appendix A.

Focus Group Three

The third focus group met for two and a half days in person in Orlando, Florida on April 1-3rd, 2022. There were six different SMEs involved in the third focus group. Like the previous focus group, the SMEs were hand selected by CLARB based on the previously identified factors. An additional factor was an emphasis on Landscape Architects who were currently on the Examination Committee or previously were involved with Exam Committee work. A list of participants is included in Table 3.

Table 3: Focus Group Two Participants

Participant	Company and Title	Geographic Location
Shawsheen Baker	City of Raleigh, Capital Projects Administrator	Raleigh, North Carolina
Kris Brown	La Terra Studio, President and Founding Principal	Dallas, Texas
Ryan Collins	Dix.Hite + Partners, Principal Landscape Architect/Vice President	Birmingham, Alabama
Wendy Fry	The Mannik and Smith Group, Inc., Vice President, Director of Landscape Architecture	Detroit, Michigan
Somaye Hoomshmand	Space2place Design Inc., Project Manager/Landscape Architect	British Columbia, Canada
Paul Kissinger	Kissinger Design Inc., President/CEO	Ann Arbor, Michigan

The purpose of the third focus group was to review the results of the validation study. They had the following goals:

- Review the write-in responses to see if anything was missing from the final job task analysis or if anything needed to be edited or changed
- Review all tasks ratings to see if tasks should be removed based on lower ratings and/or revised for clarification
- Determine the final examination blueprints and weights including number of test items and seat time

The focus group ended the meeting with a discussion about innovative items and whether all four sections of the L.A.R.E. could and/or should include advanced item types.

Results

Focus Group One

The results of the first focus group meeting were 114 job tasks spread across 16 job duties. An outline of duties and tasks are provided below in Table 4.

Table 4: Duties and Tasks Identified by Focus Group One

Duties and Tasks	
A	Leadership and Project Management
A.01	Develop and Manage Contracts
A.02	Select and Manage Project Team
A.03	Determine and Manage Project Scope, Schedule, and Budget
A.04	Perform QA/QC Activities
B	Inventory and Data Collection
B.01	Collect Related Policy Documents
B.02	Assimilate Information from Previous Planning Processes
B.03	Conduct Onsite Investigation and Fieldwork
B.04	Document Site Data
B.05	Identify Adjacent Land Use
B.06	Collect Contextual Data (e.g., natural systems, road networks, demographics, cultural and historical)
B.07	Research Codes and Ordinances
C	Stakeholder Engagement Process
C.01	Identify Stakeholders
C.02	Coordinate with Governing Bodies
C.03	Design Public Participation Process
C.04	Consult Client and/or User Groups
C.05	Summarize Client and/or User Group Feedback
C.06	Present Deliverables
C.07	Evaluate Design Based on Feedback
C.08	Obtain Public and Private Approvals
D	Physical Analysis
D.01	Determine Appropriate Types of Analyses
D.02	Perform Vegetation Analysis
D.03	Interpret and Review Soils and Geology (e.g., geotechnical, geology, soil map, soil characteristics)
D.04	Perform Micro and Macro Climate Analysis (e.g., solar, wind, precipitation, heat-island effect)
D.05	Perform Topographical Analysis (e.g., slope analysis)

Table 4: Duties and Tasks Identified by Focus Group One

Duties and Tasks	
D.06	Identify Physical Opportunities and Constraints
D.07	Perform Utility Analysis (e.g., capacity, availability, proximity, suitability)
D.08	Analyze Existing Environmental Variables (e.g., contamination, erosion, air quality, water quality)
D.09	Perform Circulation Analysis (e.g., multi-modal, access, connectivity)
D.10	Perform Visual Resource Analysis (e.g., view sheds, view corridors, aesthetics)
D.11	Perform Hydrological Analysis (e.g., floodplain, site drainage, water shed, surface, sub-surface
D.12	Perform Ecological Analysis (e.g., habitat, biodiversity, ecosystems)
E	Contextual Analysis
E.01	Anticipate Impacts of Future Developments
E.02	Identify Contextual Constraints and Opportunities
E.03	Confirm Appropriate Use
E.04	Interpret Economic Analysis
E.05	Interpret Social Analysis
E.06	Interpret Cultural, Historical, and Archeological Analysis
E.07	Conduct Code Compliance Review
F	Stewardship and Design Principles
F.01	Plan for Sustainability
F.02	Plan for Climate Resiliency
F.03	Plan for Social Equity
F.04	Recognize Historical and Cultural Significance
G	Master Planning
G.01	Formulate Planning Goals (e.g., vision)
G.02	Prepare Project Program
G.03	Synthesize Site Analysis
G.04	Establish Opportunities and Constraints
G.05	Determine Appropriate Land Use
G.06	Evaluate Planning Scenarios
G.07	Arrange Program Elements
G.08	Produce Planning Documents (e.g., land use, parks, open space, regional, historic, site master, corridor)
G.09	Establish Design Guidelines
G.10	Prepare Cost Estimates
G.11	Develop Phasing Plan
G.12	Communicate Planning Outcomes
H	Schematic Design
H.01	Develop Design Intent
H.02	Synthesize Site Analysis
H.03	Create the Basis for Design

Table 4: Duties and Tasks Identified by Focus Group One

Duties and Tasks	
H.04	Prepare Functional Diagrams (e.g., bubble)
H.05	Produce Conceptual Diagram
H.06	Develop Schematic Design Alternatives
H.07	Evaluate Design Alternatives
H.08	Refine Selected Alternatives
H.09	Produce Graphics, Illustrations, and Diagrams
I	Design Development
I.01	Refine Design Elements (e.g., material, Circulation, Lighting, Utilities, Planting)
I.02	Determine Maintenance Implications
I.03	Identify Required Approvals
I.04	Develop Cost Estimates (e.g., schematic, Design Development, Revisions)
I.05	Evaluate Value Engineering Alternatives
J	Stormwater Management
J.01	Determine Watershed Area
J.02	Calculate Stormwater Management Systems
J.03	Calculate Pervious and Impervious Areas
J.04	Develop Sustainable Water Quality Practices
J.05	Select Appropriate BMPs
J.06	Develop Erosion and Sedimentation Control Plan
J.07	Obtain Approvals and Permits
K	Grading and Earthwork
K.01	Determine Grading Strategy
K.02	Calculate Cut and Fill
K.03	Adhere to Accessibility Standards
K.04	Produce Hardscape Grading Plan
K.05	Produce Landform Grading Plan
K.06	Analyze Grading Concepts
L	Drainage Systems
L.01	Identify Overall Drainage Strategy
L.02	Design and Select Drainage Components
L.03	Prepare Drainage Plan and Profile
L.04	Develop Drainage Details
M	Construction Plans and Details
M.01	Demonstrate Understanding of Legal Liabilities
M.02	Identify Required Plan Sheets
M.03	Produce Existing Conditions and Demolition Plan
M.04	Produce Protection and Mitigation Plan
M.05	Produce Layout and Materials Plan (e.g., site furnishings)
M.06	Produce Planting Plan

Table 4: Duties and Tasks Identified by Focus Group One

Duties and Tasks	
M.07	Create Details, Elevations, Profiles, and Sections (e.g., walls, pavements, structures, specialty features, green roofs)
M.08	Collaborate on Supplemental Plans (e.g., lighting, irrigation, playground, wayfinding)
M.09	Develop General Notes
M.10	Comply with Code Requirements and Dimmensional Standards
N	Construction Specifications
N.01	Develop Project Manual and Front-End Specifications
N.02	Establish Submittal Requirements
N.03	Prepare Bid Form
N.04	Write Technical Specifications
O	Bidding
O.01	Establish Pre-Qualification Criteria
O.02	Advertise Project for Bidding
O.03	Respond to Bidders' Questions
O.04	Prepare Addenda
O.05	Tabulate and Evaluate Bids
O.06	Recommend Award of Bids
O.07	Support Contract Negotiation
P	Construction Administration
P.01	Conduct Pre-Construction Activities (e.g., walk-through, meeting)
P.02	Respond to RFIs
P.03	Manage Change Orders (e.g., bulletins, purchase requests, change directives)
P.04	Review Submittals (e.g., shop drawings, materials submittal, product submittals, substitutions)
P.05	Review Contractor Payment Application
P.06	Conduct Site Observations and Inspections
P.07	Prepare Field Reports
P.08	Perform Project Close-Out (e.g., punch-list, substantial completion, guarantee period, final completion)
P.09	Prepare As-built and Record Drawings

The first focus group also concluded that the L.A.R.E. should continue to consist of four sections, however, the sections should be very different than the current four sections of the L.A.R.E. Proposed changes to the exam sections were based on trying to place similar content together and respond to candidate complaints/frustrations regarding the current L.A.R.E. sections.

Focus Group Two

The results of the first focus group meeting included the addition of 336 knowledge statements, 208 skills, abilities, or attributes, and 132 tools, equipment, and other resources. Additionally, three job tasks were added and several were edited for clarification. The compiled results of the face-to-face focus group meeting are included in Appendix E.

Validation Survey

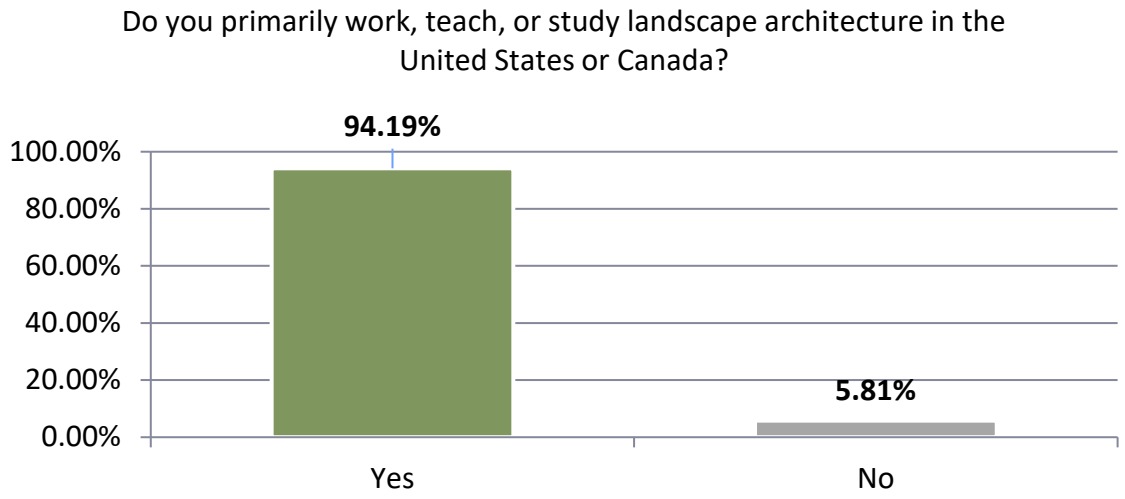
Response Rate and Representativeness of Online Validation Survey

Of all participants invited, a sample of 3,614 responded to the survey. The sample size of approximately 3,614 respondents is large enough to allow reasonable confidence in the results of the survey.

The background and demographic portions of the survey assist with determining how representative the survey respondents are of the population of interest.

The first question asked of all survey participants was "Do you primarily work, teach, or study landscape architecture in the United States or Canada?". The majority of individuals, 94.19%, selected "Yes" indicating that they primarily worked, taught, or studied in the United States or Canada, as illustrated in Figure 1.

Figure 1: Primarily work, teach, or study in the United States or Canada



Survey respondents reported if they are a licensed or registered landscape architect. The majority of respondents, 85.4%, responded "Yes" indicating they are a licensed or registered landscape architect, as indicated in Figure 2. Of those who reported being licensed in landscape architecture, the most common length of time being licensed for respondents is "16 or more years" (59.53%), as indicated in Figure 3. Additionally, respondents were asked how many licenses or registrations they currently held and the majority indicated they held "one" (49.65%), as indicated in Figure 4.

Figure 2: Licensed or registered landscape architects

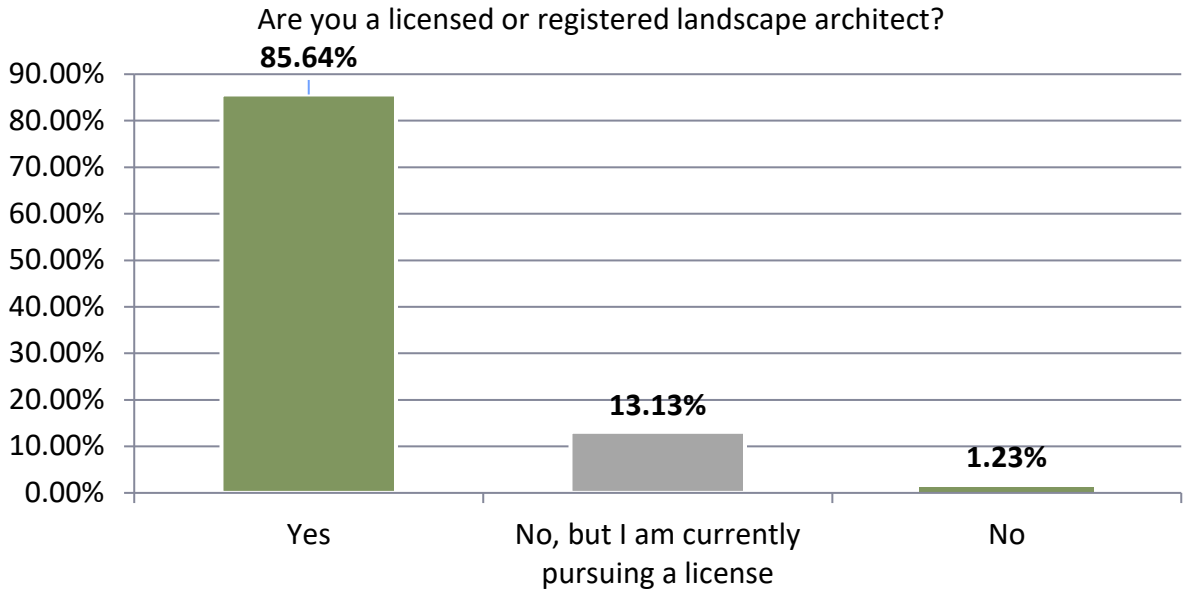


Figure 3: Length of time being licensed or registered as a landscape architect

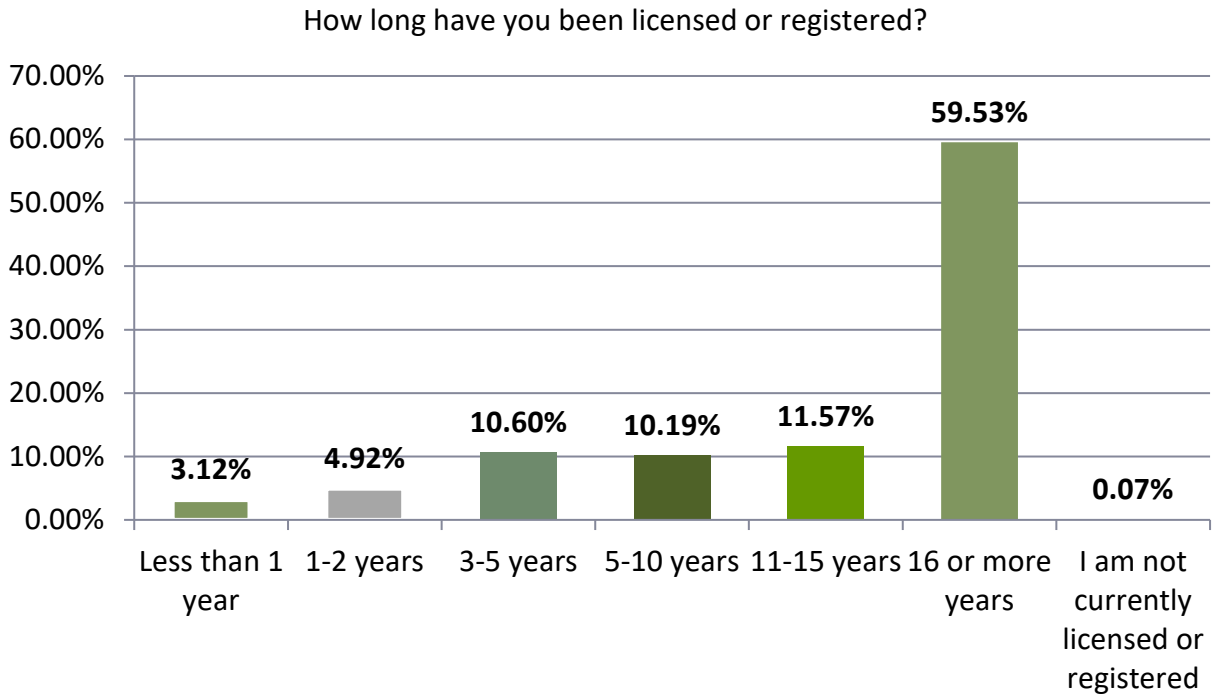
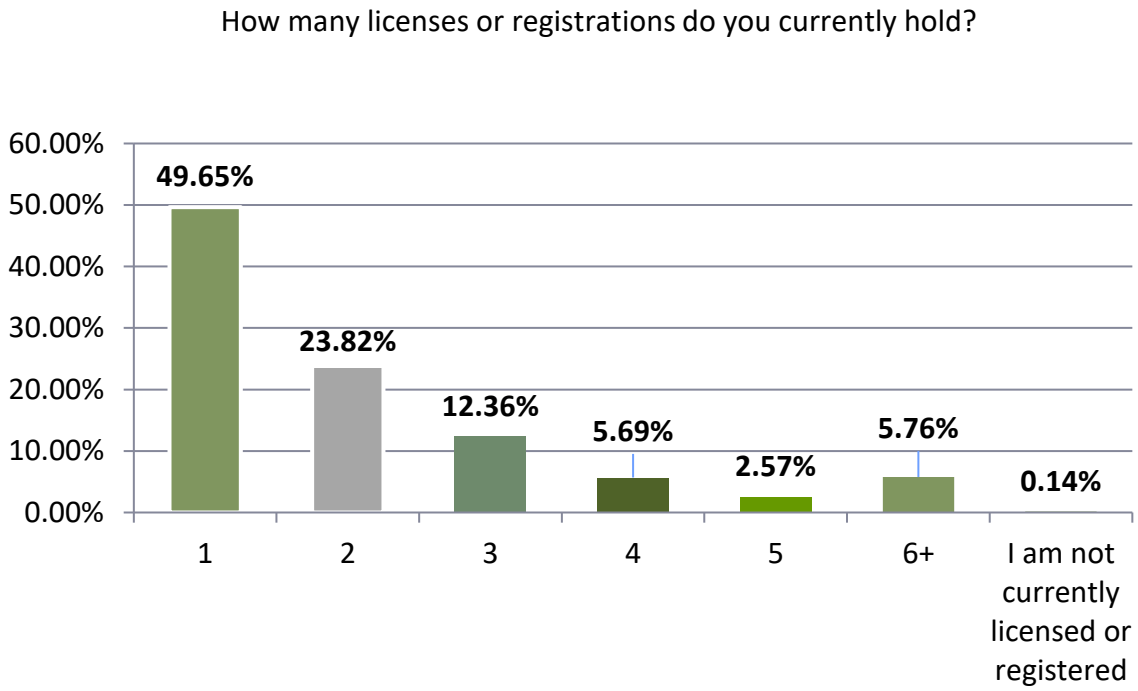
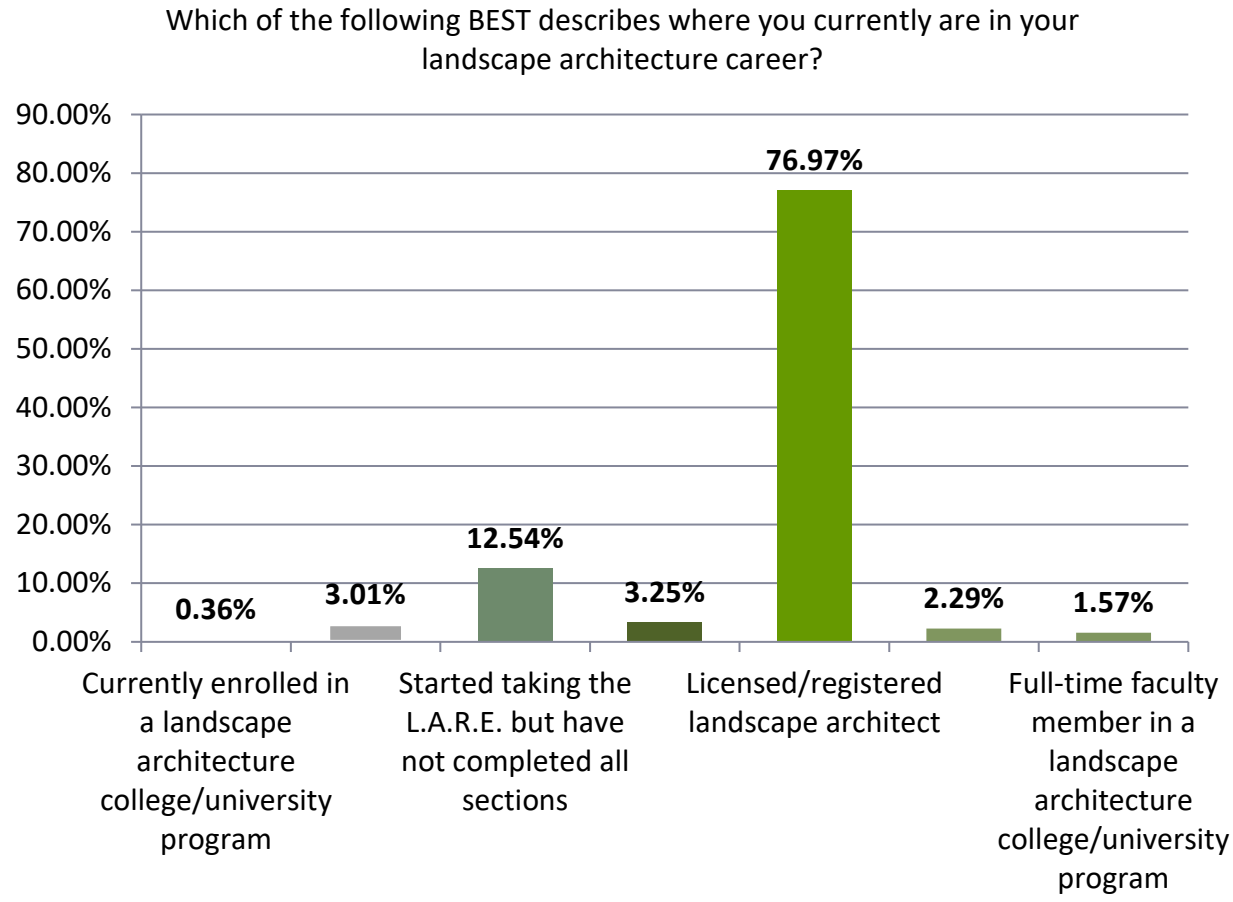


Figure 4: Number of Licenses or registrations currently held



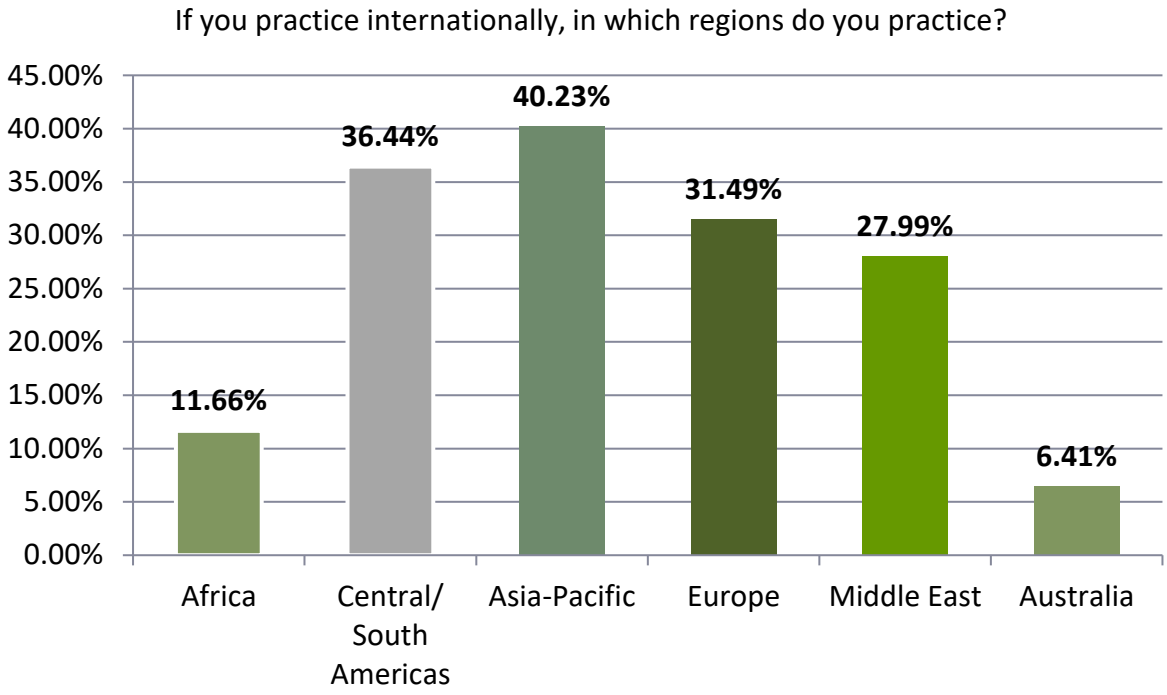
Survey participants reported working in landscape architecture at various stages in their careers. The majority of survey respondents, 76.97%, reported working as a Licensed/registered landscape architecture as indicated in Figure 5.

Figure 5: Current landscape architecture career



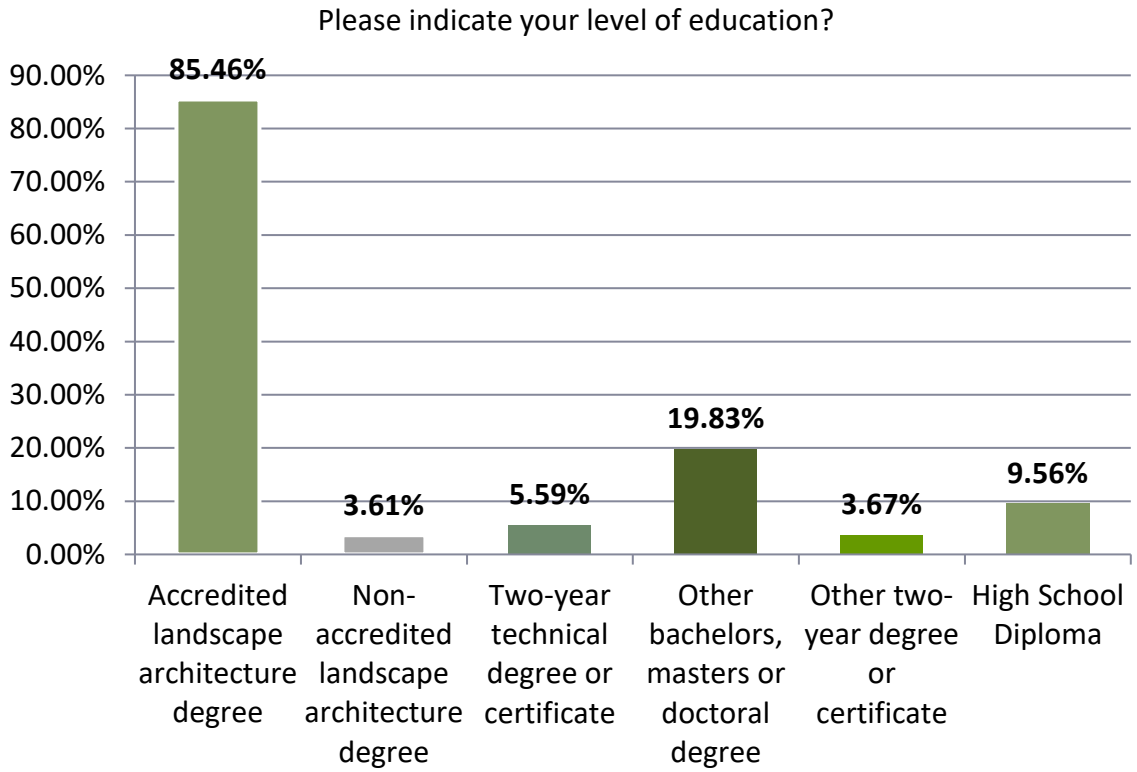
Survey respondents who practice internationally, were asked to report the regions in which they practice. Of the survey participants who responded to the survey, the majority (40.23%) reported practicing in the "Asia-Pacific", as indicated in Figure 6.

Figure 6: International regions of practice



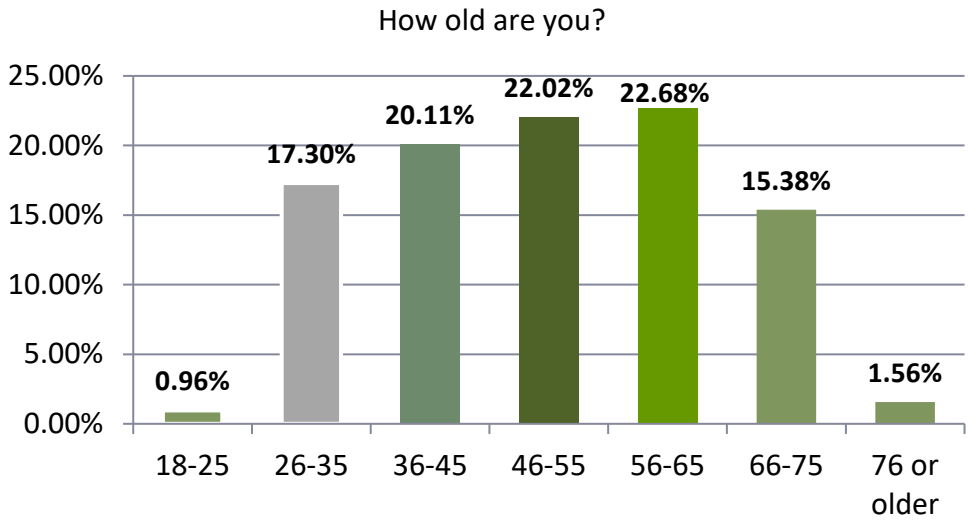
Survey participants were asked to report their highest level of education. The majority of respondents, 85.46%, reported having an accredited landscape architecture degree as their highest level of education, as illustrated in Figure 7.

Figure 7: Highest level of education



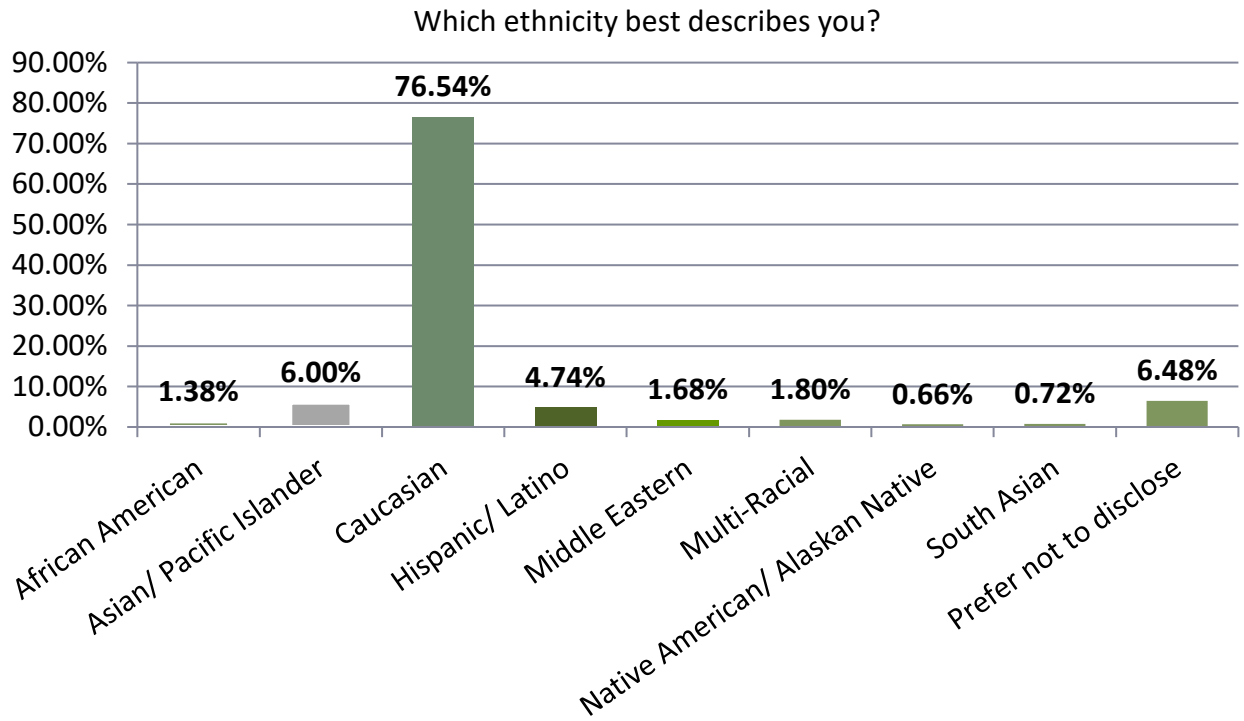
Survey respondents varied in the age in which they reported. The largest number of survey respondents,22.68%, reported that they were in the 56-65 age range, as illustrated in Figure 8.

Figure 8: Age of respondents.



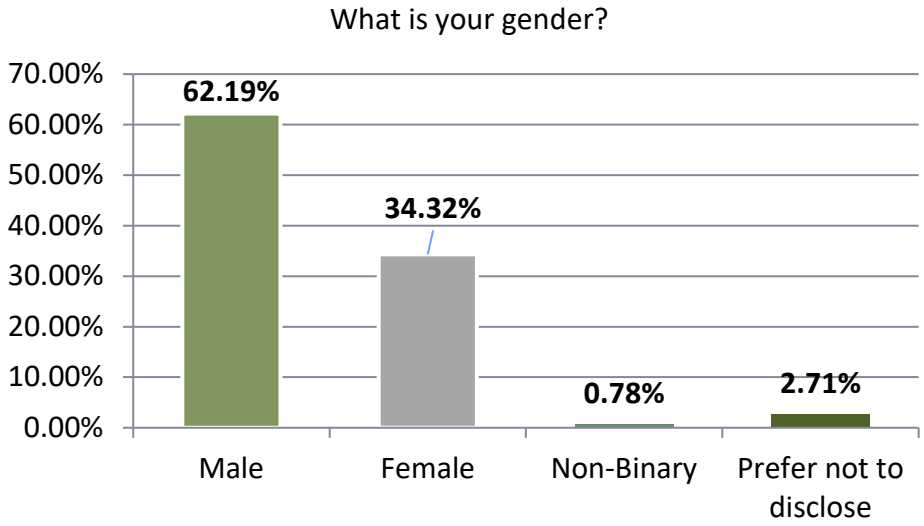
Survey respondents were asked which ethnicity best described themselves. The largest number of survey respondents reported that they were Caucasian, 76.54%, as illustrated in Figure 9.

Figure 9: Ethnicity of respondents



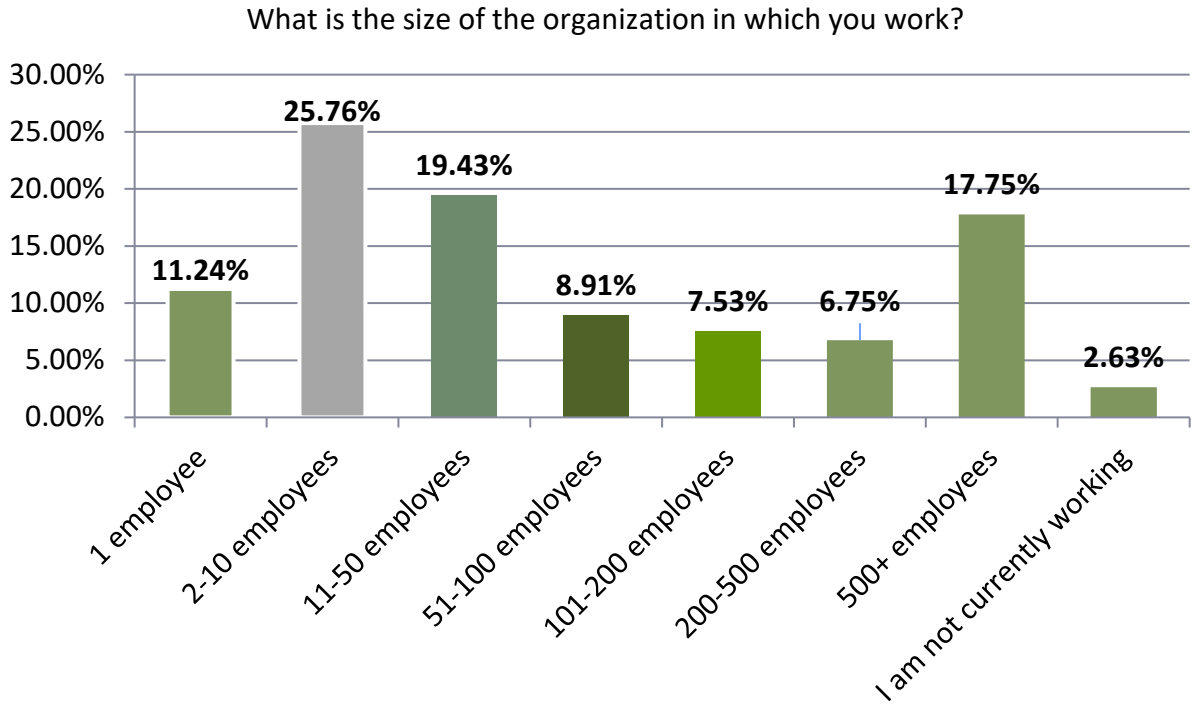
Survey respondents were asked to report their gender. The majority of respondents, 62.19%, reported their gender as male, as illustrated in Figure 10.

Figure 10: Gender of respondents



The sizes of the organizations in which survey respondents reported working varied. The largest number of survey participants, 25.76%, reported working in smaller organizations, with 2-10 employees, as illustrated in Figure 11.

Figure 11: Size of the organization in which respondents reported working.



Respondents were asked to report the location in which they primarily reside. The largest percentage of respondents, 18.51%, reported working in California, as illustrated in Table 5. Respondents had the ability to fill in which location they reside in, and their responses are listed in Table 6.

Table 5: Responses for location in which respondents primarily reside.

Location	Percentage of Respondents	Number of Respondents
Alabama	1.49%	20
Alaska	0.80%	9
Alberta	2.74%	29
Arizona	3.43%	40
Arkansas	1.49%	15
British Columbia	5.49%	60
California	18.51%	192
Colorado	2.63%	36
Connecticut	0.69%	7
Delaware	0.46%	4
District of Columbia	0.46%	7
Florida	4.80%	53
Georgia	1.37%	20
Hawaii	0.23%	2
Idaho	0.57%	6
Illinois	0.57%	10
Indiana	0.80%	9
Iowa	0.11%	3
Kansas	0.91%	13
Kentucky	1.03%	10
Louisiana	0.91%	10
Maine	0.57%	6
Manitoba	0.46%	5
Maryland	3.20%	39
Massachusetts	1.37%	16
Michigan	2.74%	34
Minnesota	1.14%	12
Mississippi	0.34%	4
Missouri	1.14%	12
Montana	0.23%	3
Nebraska	0.69%	8
Nevada	0.91%	11

Table 5: Responses for location in which respondents primarily reside.

Location	Percentage of Respondents	Number of Respondents
New Brunswick	0.11%	1
New Hampshire	0.34%	3
New Jersey	0.57%	7
New Mexico	0.57%	7
New York	2.86%	34
Newfoundland and Labrador	0.00%	0
North Carolina	3.43%	38
North Dakota	0.11%	1
Northern Mariana Islands	0.00%	0
Nova Scotia	0.23%	2
Ohio	2.40%	24
Oklahoma	0.80%	7
Ontario	1.49%	18
Oregon	3.20%	32
Pennsylvania	3.20%	39
Prince Edward Island	0.23%	2
Puerto Rico	0.00%	0
Quebec	0.23%	2
Rhode Island	0.00%	4
Saskatchewan	0.00%	0
South Carolina	0.80%	11
South Dakota	0.23%	4
Tennessee	0.57%	9
Texas	5.94%	68
Utah	0.91%	16
Vermont	0.46%	5
Virginia	1.94%	22
Washington	5.03%	52
West Virginia	0.34%	4
Wisconsin	0.11%	3
Wyoming	0.23%	2
Yukon	0.11%	1
North West Territories	0.11%	1
Nunavut	0.00%	0

*Table 6: "Other" responses for where respondents reside.**

Other Responses
Asia
California and Alaska
Collierville
India
Japan
New Zealand
NV AND WA (SPLIT MY TIME)
Singapore
Switzerland, but company is based in Florida
Taiwan
Tokyo, Japan

*Note: responses are listed here exactly as they were entered in the survey. Typographical and grammatical errors were not corrected.

Respondents were asked to report the sector in which they were employed. The majority of respondents, 66.86%, reported primarily working in a private practice, as illustrated in Figure 12. Respondents had the ability to fill in the specific sector in which they worked, and their responses are listed in Table 7.

Figure 12: Sector respondents are employed.

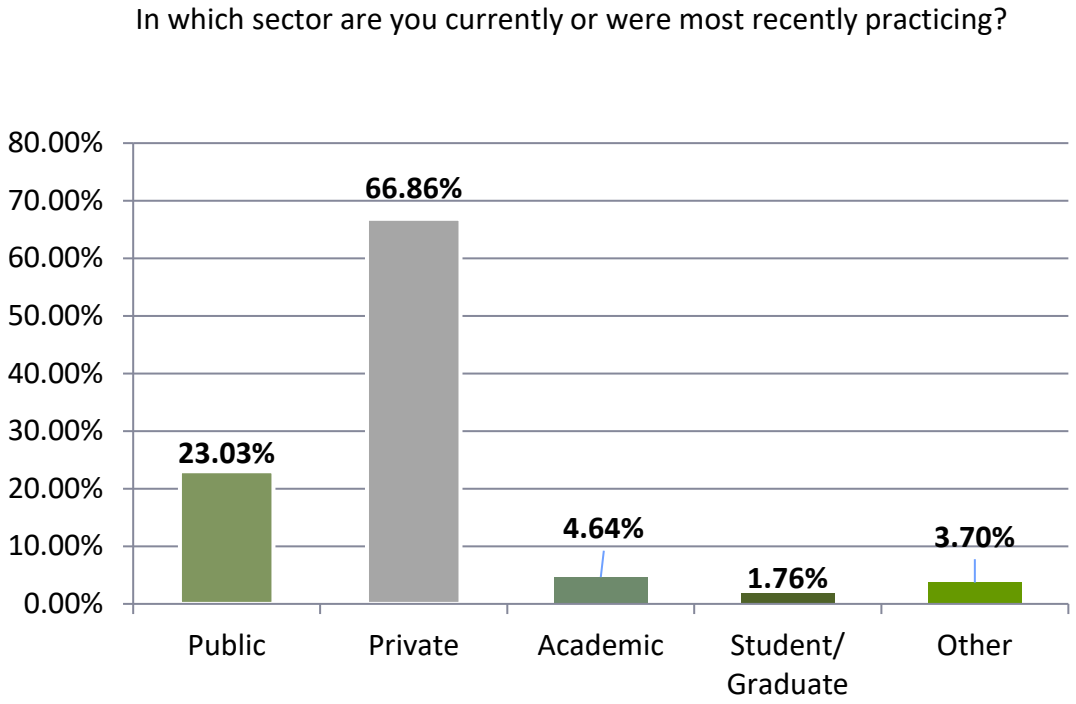


*Table 7: "Other" responses for sector respondents are employed.**

Other Responses
Chief L.A., City of Los Angeles(Retired) plus 20 years Private practice
50/50 private and public
50/50 public-private
Academic & private practice
Academic and Private Work
Architectural Review Board/Panel City of Agoura Hills, CA
Both practice and academic
Both public & Private
Both public and private
Both public and private
City Plan Review
Conservation Non-Profit
Construction
Construction
Corporate
Department of Defense
Design-Build
Employed in public (City) & have consulting business on side

*Table 7: "Other" responses for sector respondents are employed.**

Other Responses
Employed in Public sector/Consultant in private sector
Energy Utility
Equally Public Sector, Private Sector and Education at the Graduate
Facilities Director of School Campus
government
I have both a public and a private practice
I'm currently not practicing
Institutional
Landscape Architect as a consultant
Non Profit
Non-profit
Non-Profit Health Care Corporation
Open contracts with Public Sector clients and primary private developers
Playground Design
Private and Public
Private non-profit
Private non-profit
Private Practice and part time Academic
Private practice working on both public and private projects
Private Sector working on Public Sector projects
Private sector; often but not always contracted to Public Agencies
private, regional, state & federal
Public and Private
public and private
Public and Private
Public and Private
Public and Private
Public and Private
Public and Private
public and private
Public and Private projects
Public/Private Sectors
Public/Private split
Real Estate Development
Recently retired from State planning and public education
Residential
Residential & Small Commercial Design-Build
Retired in 1998
self-employed
State Government
utility
Volunteer

*Table 7: "Other" responses for sector respondents are employed.**

Other Responses
we are a design/build company. We work for public and private
Worked for Yellowstone National Park, now retired and just doing small consulting

*Note: responses are listed here exactly as they were entered in the survey. Typographical and grammatical errors were not corrected.

Participants who reported working in the private sector were asked the type of firm in which they worked. The majority of respondents, 52.78%, reported working in a landscape architecture firm, as indicated in Figure 13. A total of 114 participants selected "other". Their responses are presented in Table 8.

Figure 13: Type of architecture firm in which respondents reported working.

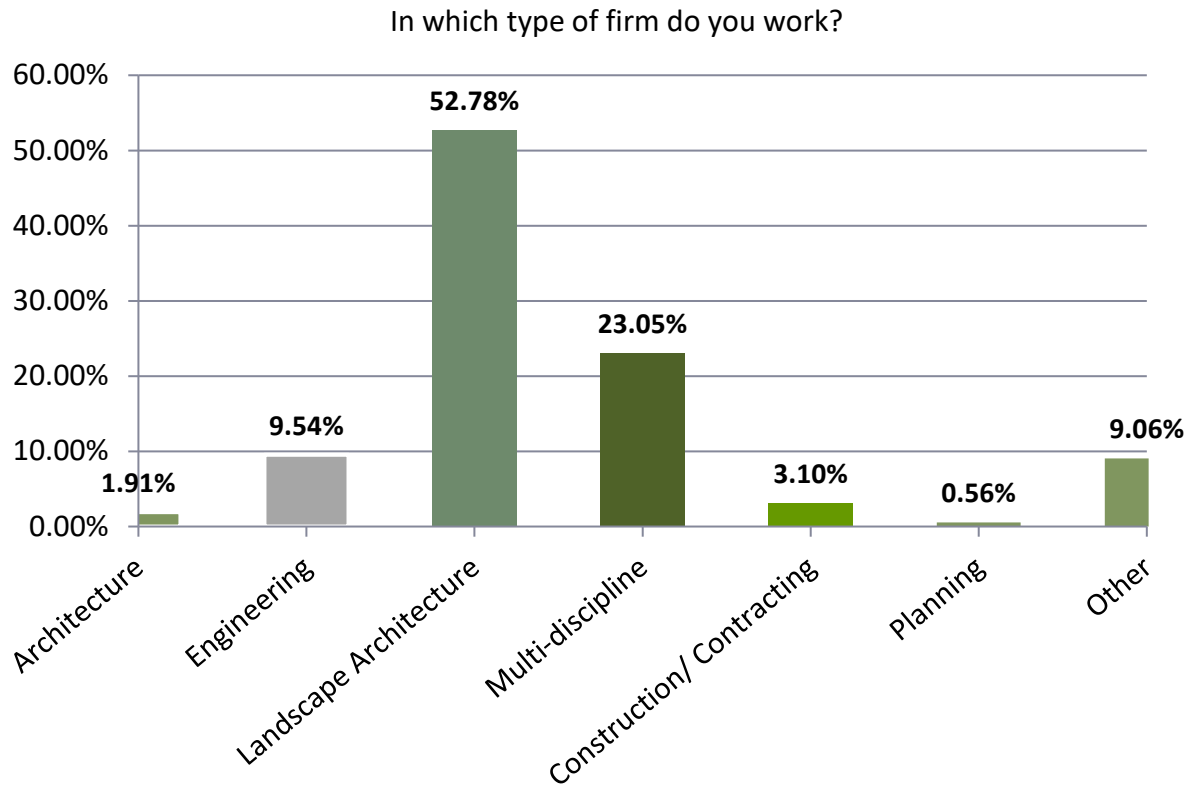


*Table 8: "Other" responses to the firm in which respondents reported working.**

Other Responses
Agriculture design consulting
All of the above, even though I'm retired (as far as receiving money). I still continue my activities as a private Landscape Architect & Environmental Planner.
Architecture / Engineering / Landscape Architecture Firm
Architecture/ Engineering
Architecture/Landscape Architecture
Architecture/Landscape Architecture
Civil Engineering
Civil Engineers, Land Surveyors and Landscape Architects
Conservation Non-profit
construction managment landscape architecture
Design / Build
design and build
Design Build
Design Build
Design Build
Design Build
Design build
Design build (landscape architecture and construction)
Design Build Landscape Architecture
Design Build Landscape Architecture
Design build landscape contractor
Design/Build
Design/Build
design/build
Design/Build/Maintenance
Design/Build: Landscape architecture/Landscape contracting
Design-Build
Design-Build
Development
Development
Development
DEvelopment advisory
Development and Construction
Development Company
Development Management/Real Estate
Ecological
Ecological Land Planning and Design (predominantly design build)
Ecological Restoration Design Build

*Table 8: "Other" responses to the firm in which respondents reported working.**

Other Responses
Energy Utility
Engineering, Planning, Landscape Architecture, Environmental
Environmental
Environmental Planning
Facilities Management
Farmer
Founder, CEO of a landscape products manufacturing corporation.
golf design
Government
government
Horticulture Services
I
I am a sole Landscape Architect in a Civil Eng. Firm - I am also a register Professional Engineer
I work for myself as a landscape designer.
I'm performing a historic restoration landscape architecture project with the NPS funded by the Student Conservation Association
Institution
Irrigation Design
K-12 private school
LA Design/build
LA original - civil engineering added 50 years ago
Land & Real Estate Development
Land planning, zoning, land development consultant
Land Trust/Nature Preserve
Landscape Architecture & Arborist
Landscape Architecture & Planning
Landscape architecture & planning
Landscape Architecture and Class A Construction
landscape architecture and environmental planning
landscape architecture and fine gardening
Landscape Architecture and Planning
Landscape Architecture and Planning
Landscape Architecture and Planning
Landscape Architecture, Engineering
Landscape Architecture, Planning, and Urban Design
Landscape Architecture, Site Planning, Urban Design
Landscape Architecture, Urban Design and Architecture
Landscape Design
Landscape Design and Construction

*Table 8: "Other" responses to the firm in which respondents reported working.**

Other Responses
Landscape Design Build
Landscape design-build
landscaping firm
logistic support
Masonry and Landscape Contractor
Mostly planting design
Multidisciplinary
Municipality
Municipality and private practice 9consultant)
Non-design consulting
Non-Profit Health Care Corporation
Not currently employed
Not LA related
Not working currently
Not working for a firm
Planning and Landscape Architecture Firm
planning and landscape architecture
planning, landscape architecture, urban design , strategic consulting
Playground Design and Equipment Manufacturer
Pool company design build
Private Consulting
Private non-profit Greenway organization
Project Management
Public sector, teaching, architects
Real Estate
Real Estate Development
Retired
Retired Caltrans Landscape Architect in Environmental Planning
self employed
Self employed
Self proprietership & Public Agency
some design build
State Government, Department of Natural Resources
University
Urban Design
utility
Water Slide Manufacturing
Wellness & creativity

*Note: responses are listed here exactly as they were entered in the survey. Typographical and grammatical errors were not corrected.

Participants who reported working in the private sector were asked to report their role within the organization in which they work. The majority of respondents, 50.96%, reported working in a leadership role, as indicated in Figure 14. A total of 262 participants selected "other" roles. Their responses are presented in Table 9.

Figure 14: Roles in which respondents reporting having within their organizations.

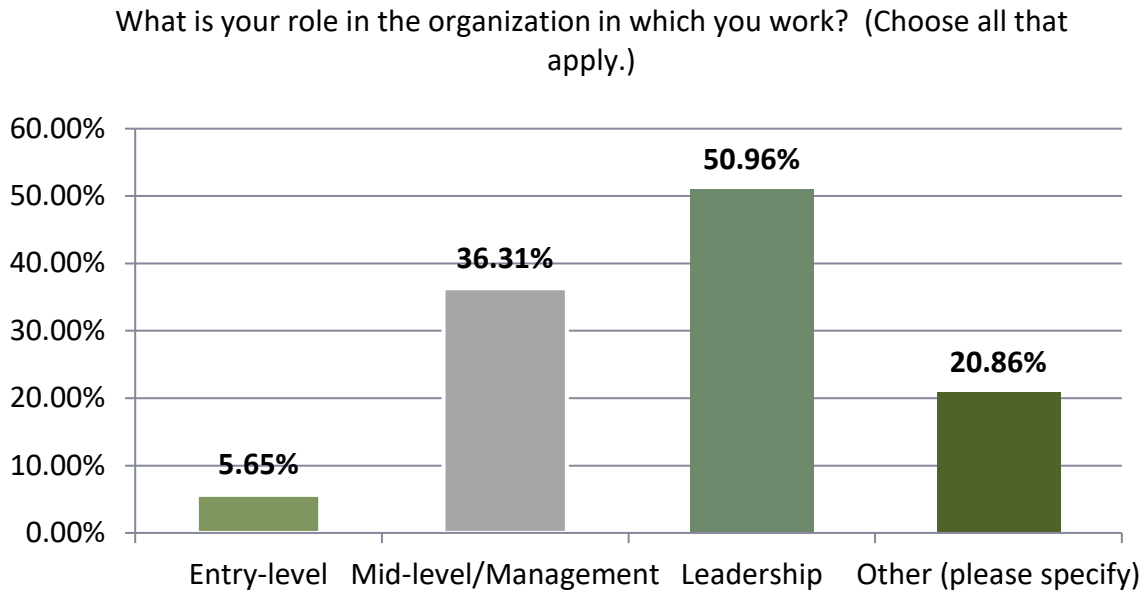


*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
Also Construction Specialist/QAQC
And hands on.
as a landscape architect and planner
associate
Associate
Both Leadership and Lead Planning & Design
Business development, design supervision and direction
Design and Construction Manager
Design and project management
Design Development Consultant

*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
Design Director
design director
designer
Designer III
Director
Director
Director
Do it all
drafting, project management, design. i am the only employee.
Enhancements manager
Entry-Level, but with plenty of project management requirements
everything I'm a renaissance man:)
Executive Team Management
firm owner
firm owner (sole proprietor)
Former Partner in multi-disciplinary firm. Have sold ownership and still working on a very limited basis.
Founder of firm
I am a project manager for a mid sized firm
I am involved in all aspects of the company
I assemble collaborative teams for large projects
i do everything that needs to be done: deisgn, project mgmt, biz mgmt
I was the only practicing LA in a Engineering Multi-disciplinary firm
I'm managing the project I'm producing but working with very minimal supervision from NPS landscape architecture staff
In-flux between entry-level and Mid-Level
intermediate
Intermediate Landscape Architect
Job Captain
Landscape architect
Landscape Architect
Landscape architect self manage
landscape architecture
Landscape Designer
Late CareerTransitional
Lead Designer
Management
Mid Level Associate
Mid level employee

*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
mid level project management not people management
Mid-level (no management)
Mid-level Staff
Not LA related
Not totally clear to be honest.
Older, mostly retired.
OWNER
Owner
Owner
Owner
Owner
Owner
owner
Owner
Owner
Owner
owner
Owner
owner
Owner
Owner
Owner
owner
owner
Owner
Owner
owner
Owner
Owner
Owner
Owner
Owner
Owner
OWNER
Owner
Owner
Owner
owner

*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
Owner
Owner
Owner
Owner
owner
owner
owner
Owner
owner
Owner
Owner
Owner
Owner
Owner
Owner
Owner
Owner
Owner
Owner
owner
Owner
owner
Owner
Owner
Owner
owner
owner
Owner
owner
Owner
Owner
Owner
Owner
Owner
owner
Owner
Owner
Owner
Owner - Principal

*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
Owner - Sole designer
Owner & Principal
Owner & Principal
owner , designer , manager , bookkeeper , part-time laborer
owner / landscape architect
Owner / Principal
Owner / Solo
Owner and Principal
Owner of a small business. 5 employess and myself
owner operator
Owner Partner
Owner, LA.
Owner, Managing Partner
owner, senior manager
Owner, sole landscape architect
owner, sole proprietor
Owner/ Principal
Owner/ Principal
owner/Founder
owner/leadership
Owner/President
Owner/President
Owner/Principal
Owner/principal
Owner/Principal
Owner/Principal
Owner/Principal
Owner/Principal
Owner/principal
Owner/Sole proprietorship
Ownership
Ownership
Part Owner
part owner and project manager
Partner
Partner/Owner
President Owner
President, Owner

*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
president, owner
President/Owner
President/Sr. Partner
Princip
principal
Principal
Principal
Principal
Principal
Principal
principal
Principal
principal
Principal
principal
Principal
Principal
Principal
Principal & Project manager
Principal & VP
Principal / Founder of my own firm
Principal / Owner
Principal / Owner
Principal and sole practitioner
Principal Consultant
Principal LA
Principal Landscape Architect
Principal, Project Manager
Principal/Director of Design
Principal/owner
Principal/Owner
Principal/Owner
Principle
Principle
Principle
Project Control
PROJECT DESIGNER
Project Landscape Architect

*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
Project Management
Project Manager
Project Manager
Project Manager
Project Manager
project manager
Project Manager
proprietor
Pursuing ownership
retired
Retired Project Manager
Retirement
Self Employed
Self Employed
Self Employed
Self Employed
self-employed
Semi-retired advisory
Semi-retired, designer
semi-retired/self employed
Senior Designer
Senior Designer
Senior designer
Senior LA
Senior Landscape Architect
Senior Landscape Architect
Senior Landscape Architect
Senior Landscape Architect
Senior landscape architect
Senior Landscape Architect and Proprietor
Senior Landscape Designer
Senior leadership
Senior Level
Senior Project Manager / Landscape Architect
Senior Project Manager, Associate
single owner of my firm
Sole member LLC / owner
sole practitioner

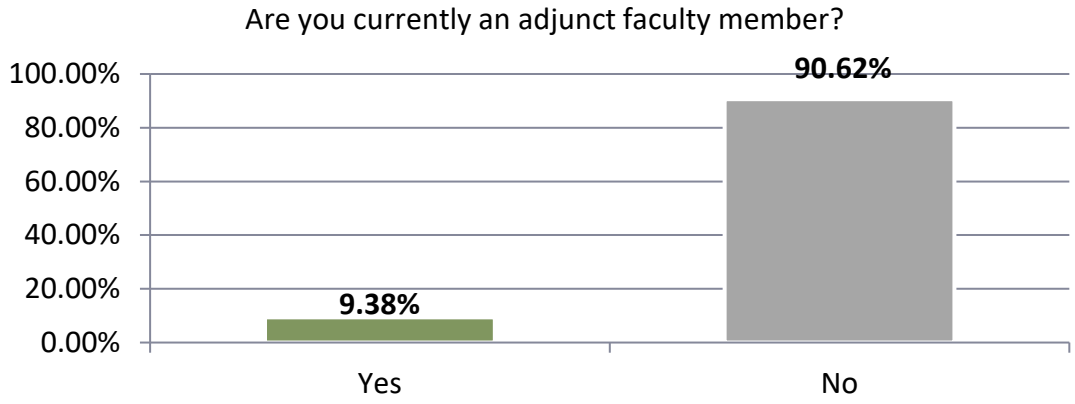
*Table 9: "Other" responses to the role in which respondents reported having within their organizations.**

Other Responses
sole practitioner and I do everything
Sole proprietor
Sole Proprietor
Sole proprietor
SOLE PROPRIETOR
Sole Proprietor
Sole Proprietor
Sole proprietor.
Specialist
Sr. Project Manager
Staff Registered Landscape Architect & Licensed Builder
subcontractor
Support to project managers
Technical expertise
Technical Lead
Technical Specialist
Technical/Professional
The only Landscape Architect for the office I work in.
upper level management
Upper Management
Upper management
Volunteer
Volunteer
Was leadership
Work for myself, primarily for entertainment; retired from real job

*Note: responses are listed here exactly as they were entered in the survey. Typographical and grammatical errors were not corrected.

Respondents that indicated that they worked in the private sector were asked to report if they are currently an adjunct faculty member. The majority of respondents, 90.62%, reported "No" indicating that they are not currently an adjunct faculty member as illustrated in Figure 15.

Figure 15: Private Sector: Currently an adjunct faculty member.



Respondents that indicated that they worked in the public sector were asked to report the type of department in which they work. The largest percentage of respondents, 35.32%, reported "Parks and recreation" as the type of department in which they work, as illustrated in Figure 16. Respondents had the ability to select "Other" and their write in responses are listed in Table 10.

Figure 16: Type of department in which respondents reported working.

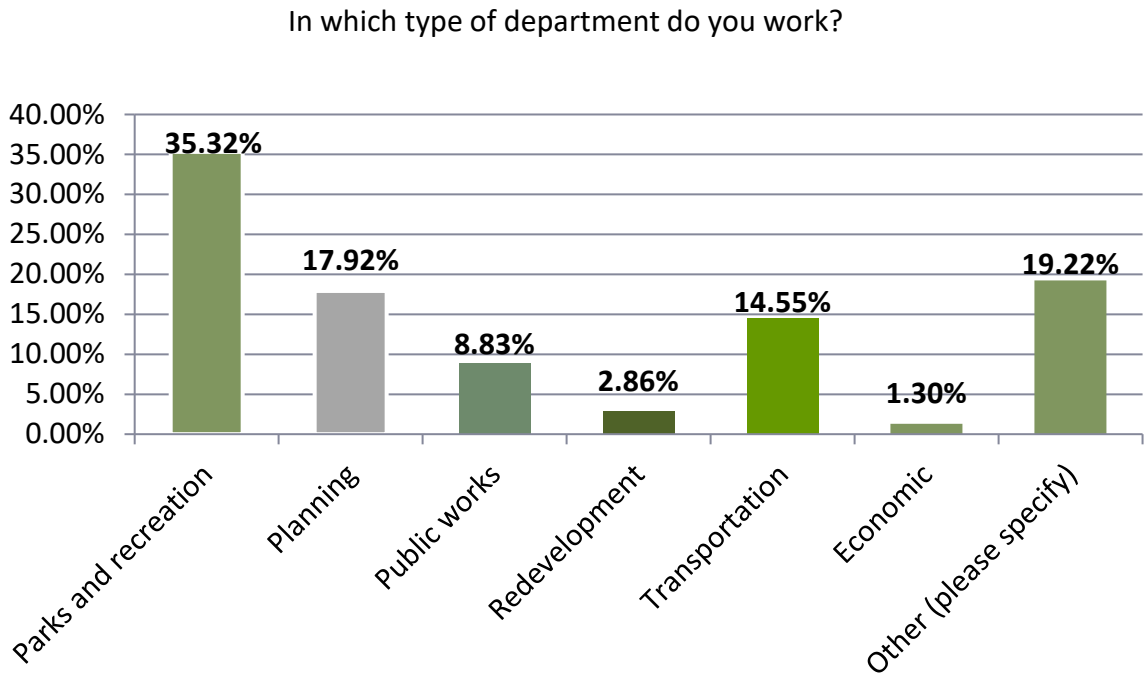


*Table 10: "Other" Responses for type of department in which respondents**

Other Responses
?
AE+LA consulting firm
All of the above
All sections of Public work
Also have worked in Parks and Recreation in the past
Arboretum
Architecture
Aviation
Business Development
Capital Infrastructure
Civil and environmental engineering
Consultant on parks and recreation projects
Design
Design and construction
Design/Build
Development Engineering
Don't understand the question. I work on al these types of projects.
Ecological restoration
Engineer for Locality
Engineering
Engineering
Engineering Department
Engineering Department
Environmental Design-Military
Environmental Maintenance
Environmental/Biological consulting firm
Federal Government Dept. of Veterans Affairs
Federal Health Care (Veterans Administration)
general design
Gov't Resort Developer Landscape Arch. Group
Head of L.A.Company
infrastructure
k-12 public school planning
Land planning and recreation
Landscape
Landscape Architecture
landscape architecture
Landscape Architecture & Engineering
Landscape Architecture & Urban Design
Landscape Architecture and Planning Department
Licensing
Management of public art and urban design

*Table 10: "Other" Responses for type of department in which respondents**

Other Responses
Multiple "departments" public & private sector; education/parks/mixed-use
N/A
no departments
Not Applicable
Parks and Nature
Planning & Landscape Architecture
Planning and Economic Development
Planning and Landscape Architecture (Multi-Discipline Firm)
Planning, Design & Construction
Planning, design, engineering, construction administration
planning, landscape architecture, engineering
Principal landscape architect
Private Design Office
Private Landscape Architecture Office
Private Landscape Firm
private practice
Private practice
private practice, we have many public projects
Property Management
Rail Transit - Stations/Station Area Design
residential development
School District
Science & Technology
Self employed
Sport Field Design
Sports and Sportcourt Facility Planning and Design
Stormwater
university community development center
Urban Design
Urban Design and Planning
VA National Cemetery Administration
work for a multidisciplinary firm

*Note: responses are listed here exactly as they were entered in the survey. Typographical and grammatical

Respondents that indicated that they worked in the public sector were asked to report the governmental level in which they work. The majority of survey respondents, 50.54%, report "Local" as the government level that they work in, as illustrated in Figure 17. Respondents had the ability to select "Other" and their write in responses are listed in Table 11.

Figure 17: Governmental level in which respondents reported working.

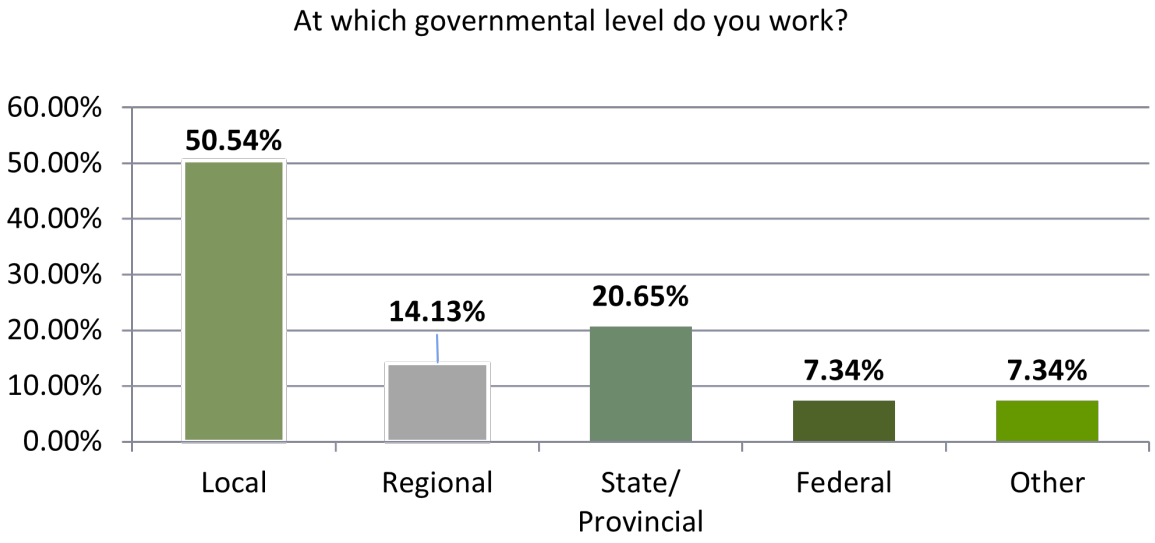


*Table 11: Governmental level in which respondents work.**

Other Responses
Across the United States
All
All of the above
All the above
All the above.
Bi-county
Conservation Authority
Consultant
Consultant
County
County
County level
have worked local (city) and regional (county)
Kingdom government
NA
not a government employee
Private
Private Design Office
private practice
Private practice
Public Academic & Medical Institution
Regional, State, and Federal
State University

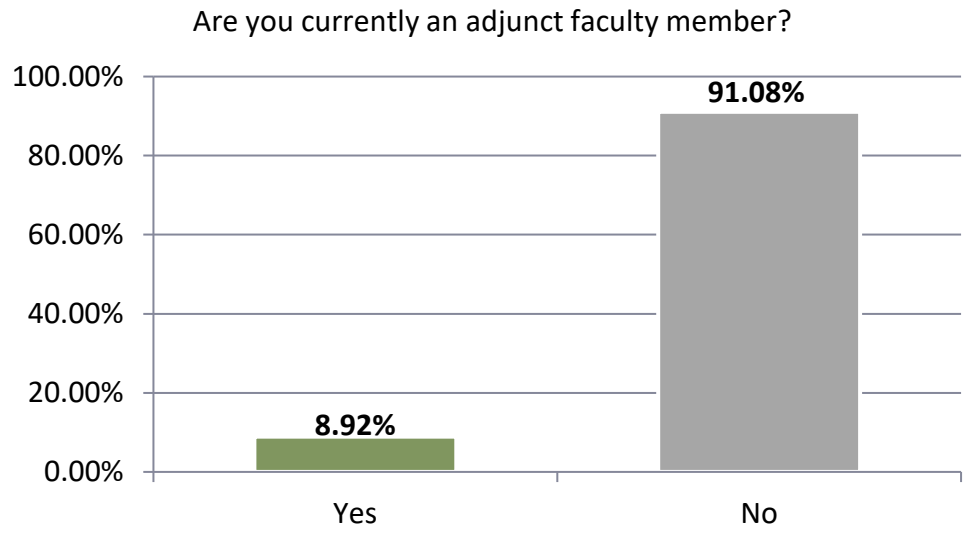
*Table 11: Governmental level in which respondents work.**

Other Responses
The company I work with spans sevarl governmental levels
USDA Forest Service, Forest Landscape Architect
We work for state and local agencies mostly, we have worked for EPA in the past
work for a multidisciplinary firm - clients include local, regional, state and federal

*Note: responses are listed here exactly as they were entered in the survey. Typographical and grammatical

Respondents that indicated that they worked in the public sector were asked to report if they are currently an adjunct faculty member. The majority of respondents, 91.08%, reported "No" indicating that they are not currently an adjunct faculty member as illustrated in Figure 18.

Figure 18: Public Sector: Currently an adjunct faculty member.



Respondents that indicated that they are a student or a recent graduate were asked to report which program of study the are currently enrolled in/recently graduated from. The majority of respondents, 38.10%, reported "Bachelors of Landscape Architecture from an institution that is not accredited by LAAB/LAAC" as illustrated in Figure 19. Of those who reported being a student/recent graduate, the majority of respondents indicated they have been in their program for two years (38.10%), as indicated in Figure 20.

Figure 19: Program of study for students/graduates

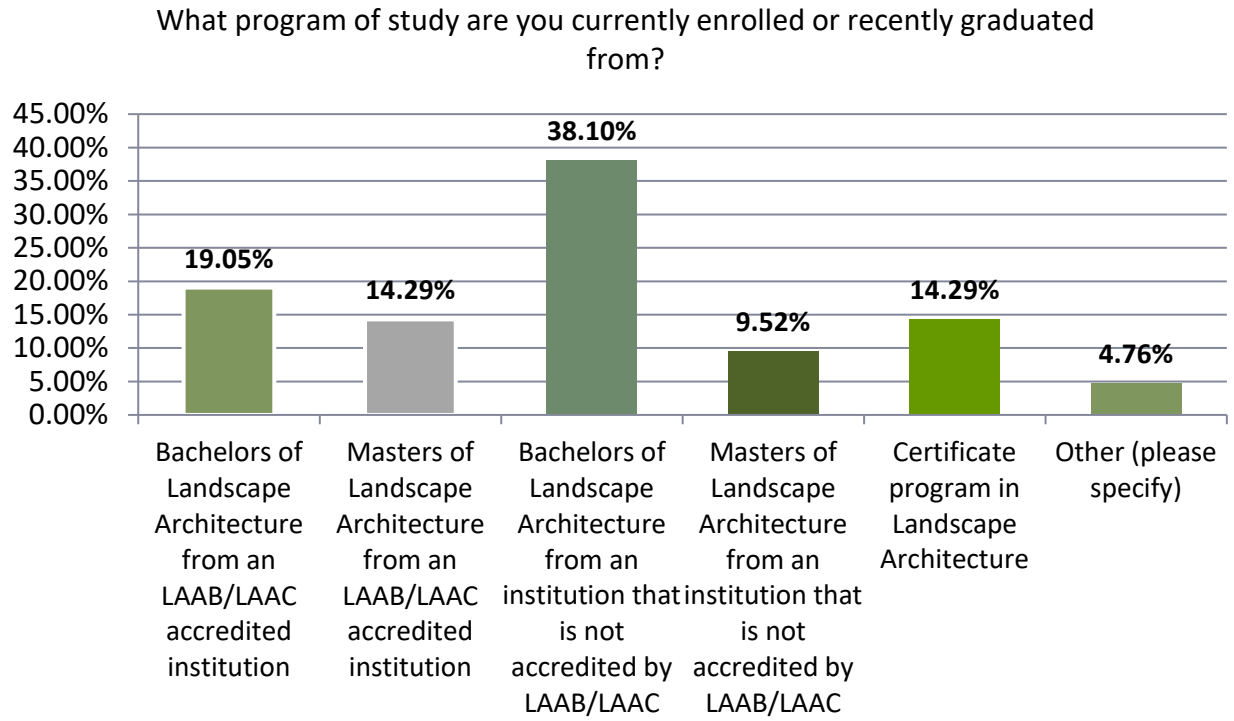
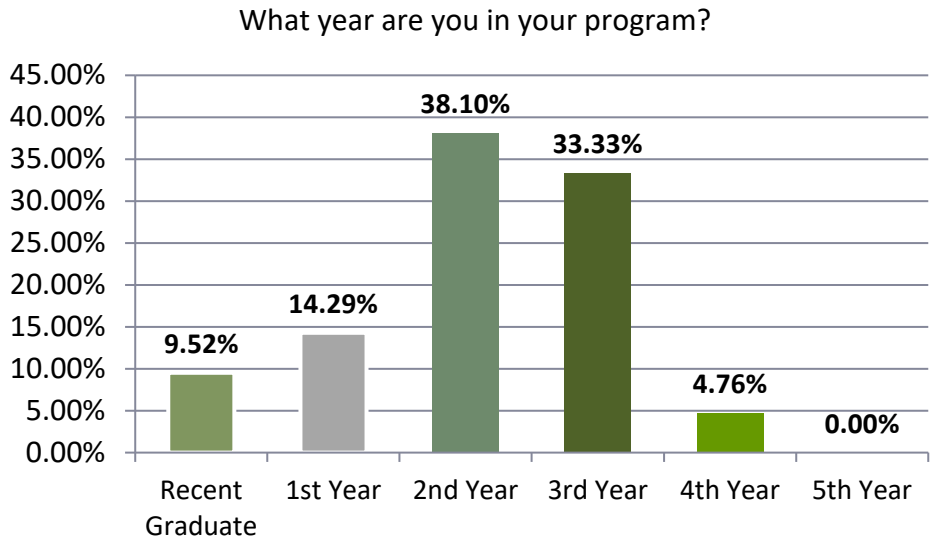


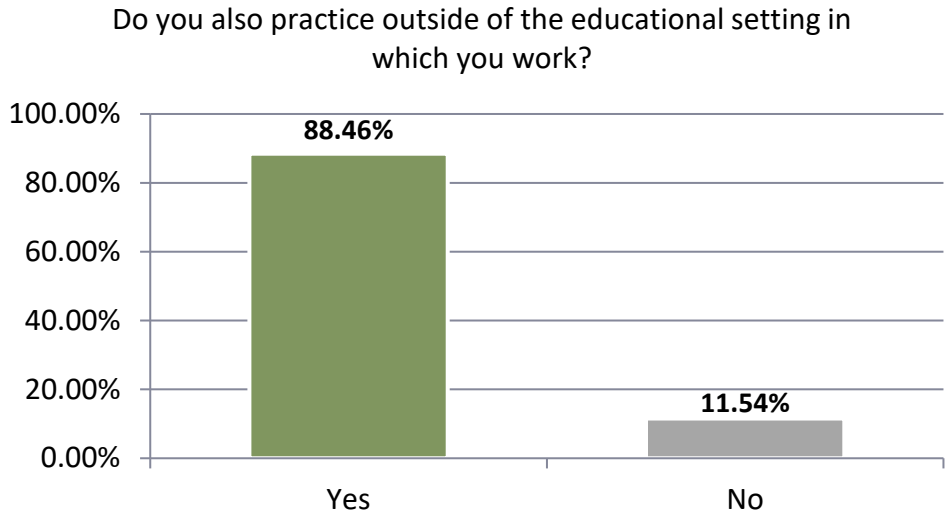
Figure 20: Current Students: Year in the program.



All respondents who reported working in an academic setting were asked if they practice outside of the educational setting in which they work. The majority of respondents, 88.46%, selected

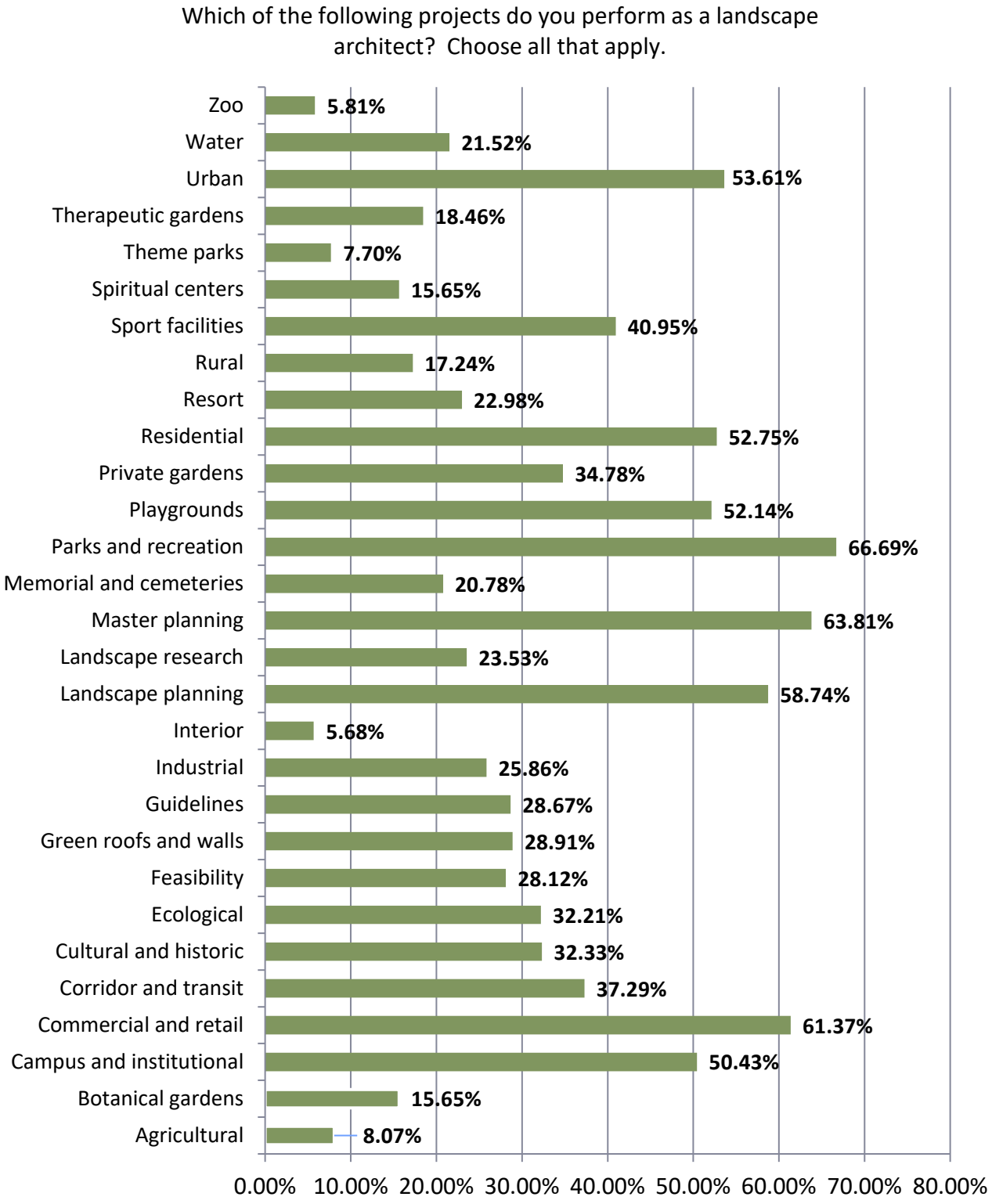
"Yes" indicating that they do work outside of the educational setting in which they work, as illustrated in Figure 21.

Figure 21: Practice landscape architecture outside of the educational setting in which they work.



Lastly, respondents were asked to report on which project they perform as a landscape architect. Respondents were allowed to select all options that are applicable. The majority of respondents, 66.69%, selected "Parks and recreation" as illustrated in Figure 22.

Figure 22: Projects performed as a landscape architect.



Overview of Survey Respondents Ratings for Task Statements

Survey respondents were asked to rate task frequency and criticality. The mean ratings for task importance ranged from 1.22 to 3.31, with an average standard deviation of 2.40, indicating that there was little variability in the ratings. The mean criticality ratings ranged from 0.50 to 1.56, with an average standard deviation of 0.98 indicating that very little variability in the ratings.

In addition to analyzing the means and standard deviations of both task ratings, the standard error of the mean was calculated for each of the task ratings. For all task ratings and across all task rating scales, the standard error of the mean was less than 0.03, indicating that if the survey were to be repeated with a different sample of landscape architects, the results would be very similar.

The final task list, with means, standard deviations, and the standard error of the mean is illustrated in Table 12.

Table 12. Means, SD, and SEM of Task Ratings.

Content Areas	Frequency Ratings			Criticality Ratings		
	Means	SD	SEM	Means	SD	SEM
Leadership and Project Management						
Develop and Manage Contracts	2.75	1.30	0.03	1.03	0.76	0.02
Select and Manage Project Team	2.55	1.34	0.03	0.86	0.70	0.02
Determine and Manage Project Scope, Schedule, and Budget	2.98	1.20	0.03	0.93	0.74	0.02
Perform QA/QC Activities	2.75	1.24	0.03	1.34	0.72	0.02
Inventory and Data Collection						
Collect Related Policy Documents	2.42	1.16	0.03	0.80	0.69	0.02
Assimilate Information from Previous Planning Processes	2.41	1.09	0.02	0.62	0.63	0.01
Conduct Onsite Investigation and Fieldwork	2.91	1.01	0.02	1.14	0.71	0.02
Document Site Data	2.85	1.05	0.02	1.03	0.70	0.02
Identify Adjacent Land Use	2.77	1.11	0.02	0.76	0.68	0.02
Collect Contextual Data (e.g., natural systems, road networks, demographics, cultural and historical)	2.57	1.19	0.03	0.88	0.71	0.02
Research Codes and Ordinances	3.07	1.00	0.02	1.24	0.73	0.02
Stakeholder Engagement Process						
Identify Stakeholders	2.32	1.27	0.03	0.72	0.69	0.02

Table 12. Means, SD, and SEM of Task Ratings.

Content Areas	Frequency Ratings			Criticality Ratings		
	Means	SD	SEM	Means	SD	SEM
Coordinate with Governing Bodies	2.87	1.17	0.03	0.92	0.74	0.02
Design Public Participation Process	1.81	1.29	0.03	0.65	0.67	0.02
Consult Client and/or User Groups	3.01	1.10	0.02	0.83	0.72	0.02
Summarize Client and/or User Group Feedback	2.45	1.19	0.03	0.67	0.67	0.02
Present Deliverables	3.10	1.07	0.02	0.69	0.73	0.02
Evaluate Design Based on Feedback	3.07	1.02	0.02	0.84	0.69	0.02
Obtain Public and Private Approvals	2.85	1.18	0.03	1.07	0.75	0.02
Physical Analysis						
Determine Appropriate Types of Analyses	2.56	1.12	0.02	0.89	0.71	0.02
Perform Vegetation Analysis	2.48	1.15	0.03	0.72	0.67	0.02
Interpret and Review Soils and Geology (e.g., geotechnical, geology, soil map, soil characteristics)	2.16	1.16	0.03	1.17	0.72	0.02
Perform Micro and Macro Climate Analysis (e.g., solar, wind, precipitation, heat-island effect)	1.98	1.20	0.03	0.76	0.66	0.02
Perform Topographical Analysis (e.g., slope analysis)	2.74	1.14	0.02	1.20	0.69	0.02
Identify Physical Opportunities and Constraints	3.14	0.96	0.02	1.04	0.69	0.02
Perform Utility Analysis (e.g., capacity, availability, proximity, suitability)	2.22	1.30	0.03	1.12	0.71	0.02
Analyze Existing Environmental Variables (e.g., contamination, erosion, air quality, water quality)	1.93	1.26	0.03	1.29	0.70	0.02
Perform Circulation Analysis (e.g., multi-modal, access, connectivity)	2.43	1.23	0.03	0.98	0.70	0.02
Perform Visual Resource Analysis (e.g., view sheds, view corridors, aesthetics)	2.46	1.18	0.03	0.61	0.65	0.02
Perform Hydrological Analysis (e.g., floodplain, site drainage, water shed, surface, sub-surface	2.36	1.29	0.03	1.43	0.69	0.02
Perform Ecological Analysis (e.g., habitat, biodiversity, ecosystems)	1.91	1.23	0.03	0.98	0.71	0.02
Contextual Analysis						
Anticipate Impacts of Future Developments	2.17	1.21	0.03	0.96	0.68	0.02
Identify Contextual Constraints and Opportunities	2.56	1.16	0.03	0.81	0.67	0.02
Confirm Appropriate Use	2.51	1.20	0.03	0.95	0.69	0.02

Table 12. Means, SD, and SEM of Task Ratings.

Content Areas	Frequency Ratings			Criticality Ratings		
	Means	SD	SEM	Means	SD	SEM
Interpret Economic Analysis	1.26	1.18	0.03	0.65	0.67	0.02
Interpret Social Analysis	1.43	1.18	0.03	0.66	0.66	0.02
Interpret Cultural, Historical, and Archeological Analysis	1.63	1.17	0.03	0.78	0.69	0.02
Conduct Code Compliance Review	2.46	1.33	0.03	1.32	0.70	0.02
Stewardship and Design Principles						
Plan for Sustainability	2.57	1.14	0.03	1.10	0.71	0.02
Plan for Climate Resiliency	2.14	1.29	0.03	1.15	0.75	0.02
Plan for Environmental and Social Equity	1.87	1.30	0.03	0.97	0.76	0.02
Recognize Historical and Cultural Significance	2.18	1.17	0.03	0.87	0.71	0.02
Master Planning						
Formulate Planning Goals (e.g., vision)	2.46	1.25	0.03	0.81	0.70	0.02
Prepare Project Program	2.54	1.22	0.03	0.76	0.68	0.02
Synthesize Site Analysis	2.76	1.13	0.03	0.95	0.70	0.02
Establish Opportunities and Constraints	2.76	1.14	0.03	0.85	0.70	0.02
Determine Appropriate Land Use	2.15	1.33	0.03	1.01	0.70	0.02
Evaluate Planning Scenarios	2.15	1.31	0.03	0.78	0.68	0.02
Arrange Program Elements	2.69	1.25	0.03	0.84	0.70	0.02
Produce Planning Documents (e.g., land use, parks, open space, regional, historic, site master, corridor)	2.32	1.34	0.03	0.91	0.70	0.02
Establish Design Guidelines	2.09	1.22	0.03	0.86	0.69	0.02
Prepare Cost Estimates	2.73	1.23	0.03	0.84	0.76	0.02
Develop Phasing Plan	2.38	1.14	0.03	0.64	0.66	0.02
Communicate Planning Outcomes	2.20	1.31	0.03	0.63	0.67	0.02
Schematic Design						
Develop Design Intent	3.05	1.10	0.03	0.80	0.71	0.02
Synthesize Site Analysis	2.90	1.08	0.03	0.89	0.71	0.02
Create the Basis for Design	2.89	1.13	0.03	0.78	0.70	0.02
Prepare Functional Diagrams (e.g., bubble)	2.33	1.27	0.03	0.50	0.64	0.02
Produce Conceptual Diagram	2.82	1.16	0.03	0.61	0.66	0.02
Develop Schematic Design Alternatives	2.97	1.08	0.03	0.69	0.66	0.02
Evaluate Design Alternatives	3.08	0.99	0.02	0.78	0.68	0.02
Refine Selected Alternatives	3.09	1.02	0.02	0.76	0.68	0.02
Produce Graphics, Illustrations, and Diagrams	2.98	1.17	0.03	0.53	0.67	0.02
Design Development						

Table 12. Means, SD, and SEM of Task Ratings.

Content Areas	Frequency Ratings			Criticality Ratings		
	Means	SD	SEM	Means	SD	SEM
Refine Design Elements (e.g., material, circulation, lighting, utilities, planting)	3.21	1.00	0.02	1.10	0.67	0.02
Determine Maintenance Implications	2.71	1.10	0.03	1.00	0.67	0.02
Identify Required Approvals	2.93	1.12	0.03	1.00	0.76	0.02
Develop Cost Estimates (e.g., schematic, design development, revisions)	2.77	1.20	0.03	0.85	0.75	0.02
Evaluate Value Engineering Alternatives	2.54	1.21	0.03	0.91	0.71	0.02
Stormwater Management						
Determine Watershed Area	1.50	1.28	0.03	1.21	0.73	0.02
Calculate Stormwater Management Systems	1.22	1.29	0.03	1.37	0.70	0.02
Calculate Pervious and Impervious Areas	2.00	1.30	0.03	1.11	0.71	0.02
Develop Sustainable Water Quality Practices	1.80	1.33	0.03	1.16	0.69	0.02
Select Surface and Sub-Surface BMPs	1.81	1.34	0.03	1.16	0.69	0.02
Select Building-Systems BMPs (e.g., Green Roofs, Blue Roofs, Brown Roofs, Green Walls, Water Harvesting/Cisterns, Gray Water)	1.48	1.21	0.03	1.04	0.70	0.02
Develop Erosion and Sedimentation Control Plan	1.62	1.38	0.03	1.30	0.68	0.02
Obtain Approvals and Permits	2.04	1.46	0.04	1.12	0.76	0.02
Grading and Earthwork						
Determine Grading Strategy	2.59	1.27	0.03	1.28	0.70	0.02
Calculate Cut and Fill	1.58	1.32	0.03	0.91	0.74	0.02
Adhere to Accessibility Standards	3.14	1.16	0.03	1.56	0.63	0.02
Produce Hardscape Grading Plan	2.63	1.30	0.03	1.37	0.65	0.02
Produce Landform Grading Plan	2.50	1.30	0.03	1.21	0.68	0.02
Review Grading Plans	2.79	1.26	0.03	1.34	0.70	0.02
Drainage Systems						
Identify Overall Drainage Strategy	2.27	1.33	0.03	1.37	0.68	0.02
Design and Select Drainage Components	1.93	1.32	0.03	1.28	0.68	0.02
Prepare Drainage Plan and Profile	1.46	1.35	0.03	1.28	0.69	0.02
Develop Drainage Details	1.63	1.31	0.03	1.20	0.70	0.02
Construction Plans and Details						
Demonstrate Understanding of Legal Liabilities	2.69	1.23	0.03	1.50	0.66	0.02
Identify Required Plan Sheets	3.02	1.20	0.03	0.77	0.74	0.02
Produce Existing Conditions and Demolition Plan	2.55	1.27	0.03	1.08	0.70	0.02

Table 12. Means, SD, and SEM of Task Ratings.

Content Areas	Frequency Ratings			Criticality Ratings		
	Means	SD	SEM	Means	SD	SEM
Produce Protection and Mitigation Plan	2.24	1.33	0.03	1.17	0.68	0.02
Produce Layout and Materials Plan (e.g., site furnishings)	2.96	1.23	0.03	1.00	0.71	0.02
Produce Planting Plan	3.30	1.10	0.03	0.94	0.69	0.02
Create Details, Elevations, Profiles, and Sections (e.g., walls, pavements, structures, specialty features, green roofs)	3.00	1.23	0.03	1.37	0.67	0.02
Collaborate on Supplemental Plans (e.g., lighting, irrigation, playground, wayfinding)	2.95	1.20	0.03	1.14	0.68	0.02
Develop General Notes, Schedules, and Legends	3.07	1.20	0.03	1.06	0.71	0.02
Comply with Code Requirements and Dimensional Standards	3.31	1.05	0.03	1.44	0.66	0.02
Construction Specifications						
Develop Project Manual and Front-End Specifications	1.98	1.37	0.03	1.20	0.72	0.02
Establish Submittal Requirements	2.18	1.37	0.03	0.93	0.73	0.02
Prepare Bid Form	1.79	1.36	0.03	0.81	0.76	0.02
Write Technical Specifications	2.18	1.38	0.03	1.38	0.69	0.02
Bidding						
Establish Pre-Qualification Criteria	1.41	1.29	0.03	0.85	0.74	0.02
Advertise Project for Bidding	1.22	1.35	0.03	0.55	0.69	0.02
Respond to Bidders' Questions	2.24	1.31	0.03	0.89	0.73	0.02
Prepare Addenda	1.99	1.36	0.03	0.83	0.74	0.02
Tabulate and Evaluate Bids	1.70	1.35	0.03	0.73	0.74	0.02
Recommend Award of Bids	1.68	1.38	0.03	0.79	0.74	0.02
Support Contract Negotiation	1.45	1.33	0.03	0.72	0.74	0.02
Construction Administration						
Conduct Pre-Construction Activities (e.g., walk-through, meeting)	2.56	1.23	0.03	0.98	0.73	0.02
Respond to RFIs	2.62	1.28	0.03	1.06	0.72	0.02
Manage Change Orders (e.g., bulletins, purchase requests, change directives)	2.21	1.33	0.03	0.98	0.74	0.02
Review Submittals (e.g., shop drawings, materials submittal, product submittals, substitutions)	2.69	1.22	0.03	1.25	0.71	0.02
Review Contractor Payment Application	1.68	1.43	0.04	0.70	0.75	0.02
Conduct Site Observations and Inspections	2.82	1.15	0.03	1.36	0.68	0.02
Prepare Field Reports	2.37	1.30	0.03	1.04	0.72	0.02

Table 12. Means, SD, and SEM of Task Ratings.

Content Areas	Frequency Ratings			Criticality Ratings		
	Means	SD	SEM	Means	SD	SEM
Perform Project Close-Out (e.g., punch-list, substantial completion, guarantee period, final completion)	2.48	1.29	0.03	1.18	0.70	0.02
Prepare As-built and Record Drawings	1.79	1.31	0.03	0.97	0.74	0.02

Focus Group Three

The third focus group reviewed the results of the validation survey. They began with reviewing the tasks that were flagged for low frequency and criticality ratings, of which there were 13. Those tasks are as follows:

- Perform Micro and Macro Climate Analysis (e.g., solar, wind, precipitation, heat island effect)
- Interpret Economic Analysis
- Interpret Social Analysis
- Interpret Cultural, Historical, and Archeological Analysis
- Calculate Cut and Fill
- Establish Pre Qualification Criteria
- Advertise Project for Bidding
- Prepare Addenda
- Tabulate and Evaluate Bids
- Recommend Award of Bids
- Support Contract Negotiation
- Review Contractor Payment Application
- Prepare As Built and Record Drawings

Of the 13 tasks flagged, all were removed from the final task list. Additionally, three tasks with lower ratings were combined into one larger task area. Specifically, consult Client and/or User Groups, Summarize Client and/or User Group Feedback, and Present Deliverables were combined into Support Public Participation Process (e.g., consult with clients, summarize feedback, and communicate deliverables).

At the end of the survey, respondents were offered a chance to write-in responses to any job-related tasks that were missing from the survey. The responses to that question are presented in Appendices B.

The final DACUM Chart after reviewing all write-in response and rating scales, and adjusting job tasks accordingly can be found in Appendix C. The final examination blueprints can also be found in Appendix D.

Next Steps

The Council of Landscape Architectural Registration Boards' Examination Committees begin reclassification of the existing item banks to the new examination blueprints. Additionally, all updates to the L.A.R.E. should be published to the candidate population in advance of updating any exam content.

The job analysis should be revisited every five to seven years to ensure that the examination blueprint reflects current practice, so the job analysis should be revisited again no later than 2027.

Appendix A: Online Survey

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Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

Please click on the “next" button below to begin the survey.

It should take about 45 minutes, and your response will be kept confidential. You can stop during the survey and finish it later, provided you use the same device and you have cookies enabled.

If you have difficulty completing the survey, please contact edoherty@proftesting.com.

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Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

* Do you primarily work, teach, or study landscape architecture in the United States or Canada?

- ◯ Yes
- ◯ No

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Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

Below is a list of tasks that could be performed by Landscape Architects. The tasks are organized into 16 work areas:

1. **Leadership and Project Management**
2. **Inventory and Data Collection**
3. **Stakeholder Engagement Process**
4. **Physical Analysis**
5. **Contextual Analysis**
6. **Stewardship and Design Principles**
7. **Master Planning**
8. **Schematic Design**
9. **Design Development**
10. **Stormwater Management**
11. **Grading and Earthwork**
12. **Drainage Systems**
13. **Construction Plans and Details**
14. **Construction Specifications**
15. **Bidding**
16. **Construction Administration**

For each task, please indicate the frequency with which you*, as a landscape architect, perform these tasks and the criticality of performing the task incorrectly (or not at all).

- **Frequency is defined as how often a task is performed over a period of time.**
- **Criticality is defined as the potential for public harm if the task is not performed properly.**

Leadership and Project Management

	Frequency	Criticality
Develop and Manage Contracts		
Select and Manage Project Team		
Determine and Manage Project Scope, Schedule, and Budget		
Perform QA/QC Activities		

Inventory and Data Collection

	Frequency	Criticality
Collect Related Policy Documents		
Assimilate Information from Previous Planning Processes		
Conduct Onsite Investigation and Fieldwork		
Document Site Data		
Identify Adjacent Land Use		
Collect Contextual Data (e.g., natural systems, road networks, demographics, cultural and historical)		
Research Codes and Ordinances		

Stakeholder Engagement Process

	Frequency	Criticality
Identify Stakeholders		
Coordinate with Governing Bodies		
Design Public Participation Process		
Consult Client and/or User Groups		
Summarize Client and/or User Group Feedback		
Present Deliverables		
Evaluate Design Based on Feedback		
Obtain Public and Private Approvals		

Physical Analysis

	Frequency	Criticality
Determine Appropriate Types of Analyses		
Perform Vegetation Analysis		
Interpret and Review Soils and Geology (e.g., geotechnical, geology, soil map, soil characteristics)		
Perform Micro and Macro Climate Analysis (e.g., solar, wind, precipitation, heat-island effect)		
Perform Topographical Analysis (e.g., slope analysis)		
Identify Physical Opportunities and Constraints		
Perform Utility Analysis (e.g., capacity, availability, proximity, suitability)		
Analyze Existing Environmental Variables (e.g., contamination, erosion, air quality, water quality)		
Perform Circulation Analysis (e.g., multi-modal, access, connectivity)		
Perform Visual Resource Analysis (e.g., view sheds, view corridors, aesthetics)		
Perform Hydrological Analysis (e.g., floodplain, site drainage, water shed, surface, sub-surface		
Perform Ecological Analysis (e.g., habitat, biodiversity, ecosystems)		

Contextual Analysis

	Frequency	Criticality
Anticipate Impacts of Future Developments		
Identify Contextual Constraints and Opportunities		
Confirm Appropriate Use		
Interpret Economic Analysis		
Interpret Social Analysis		
Interpret Cultural, Historical, and Archeological Analysis		
Conduct Code Compliance Review		

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

(Continued)

Below is a list of tasks that could be performed by Landscape Architects. The tasks are organized into 16 work areas:

1. **Leadership and Project Management**
2. **Inventory and Data Collection**
3. **Stakeholder Engagement Process**
4. **Physical Analysis**
5. **Contextual Analysis**
6. **Stewardship and Design Principles**
7. **Master Planning**
8. **Schematic Design**
9. **Design Development**
10. **Stormwater Management**
11. **Grading and Earthwork**
12. **Drainage Systems**
13. **Construction Plans and Details**
14. **Construction Specifications**
15. **Bidding**
16. **Construction Administration**

For each task, please indicate the frequency with which you*, as a landscape architect, perform these tasks and the criticality of performing the task incorrectly (or not at all).

- **Frequency is defined as how often a task is performed over a period of time.**
- **Criticality is defined as the potential for public harm if the task is not performed properly.**

Stewardship and Design Principles

	Frequency	Criticality
Plan for Sustainability		
Plan for Climate Resiliency		
Plan for Environmental and Social Equity		
Recognize Historical and Cultural Significance		

Master Planning

	Frequency	Criticality
Formulate Planning Goals (e.g., vision)		
Prepare Project Program		
Synthesize Site Analysis		
Establish Opportunities and Constraints		
Determine Appropriate Land Use		
Evaluate Planning Scenarios		
Arrange Program Elements		
Produce Planning Documents (e.g., land use, parks, open space, regional, historic, site master, corridor)		
Establish Design Guidelines		
Prepare Cost Estimates		
Develop Phasing Plan		
Communicate Planning Outcomes		

Schematic Design

	Frequency	Criticality
Develop Design Intent		
Synthesize Site Analysis		
Create the Basis for Design		
Prepare Functional Diagrams (e.g., bubble)		
Produce Conceptual Diagram		
Develop Schematic Design Alternatives		
Evaluate Design Alternatives		
Refine Selected Alternatives		
Produce Graphics, Illustrations, and Diagrams		

Design Development

	Frequency	Criticality
Refine Design Elements (e.g., material, circulation, lighting, utilities, planting)		
Determine Maintenance Implications		
Identify Required Approvals		
Develop Cost Estimates (e.g., schematic, design development, revisions)		
Evaluate Value Engineering Alternatives		

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

(Continued)

Below is a list of tasks that could be performed by Landscape Architects. The tasks are organized into 16 work areas:

1. **Leadership and Project Management**
2. **Inventory and Data Collection**
3. **Stakeholder Engagement Process**
4. **Physical Analysis**
5. **Contextual Analysis**
6. **Stewardship and Design Principles**
7. **Master Planning**
8. **Schematic Design**
9. **Design Development**
10. **Stormwater Management**
11. **Grading and Earthwork**
12. **Drainage Systems**
13. **Construction Plans and Details**
14. **Construction Specifications**
15. **Bidding**
16. **Construction Administration**

For each task, please indicate the frequency with which you*, as a landscape architect, perform these tasks and the criticality of performing the task incorrectly (or not at all).

- **Frequency is defined as how often a task is performed over a period of time.**
- **Criticality is defined as the potential for public harm if the task is not performed properly.**

Stormwater Management

	Frequency	Criticality
Determine Watershed Area		
Calculate Stormwater Management Systems		
Calculate Pervious and Impervious Areas		
Develop Sustainable Water Quality Practices		
Select Surface and Sub-Surface BMPs		
Select Building-Systems BMPs (e.g., Green Roofs, Blue Roofs, Brown Roofs, Green Walls, Water Harvesting/Cisterns, Gray Water)		
Develop Erosion and Sedimentation Control Plan		
Obtain Approvals and Permits		

Grading and Earthwork

	Frequency	Criticality
Determine Grading Strategy		
Calculate Cut and Fill		
Adhere to Accessibility Standards		
Produce Hardscape Grading Plan		
Produce Landform Grading Plan		
Review Grading Plans		

Drainage Systems

	Frequency	Criticality
Identify Overall Drainage Strategy		
Design and Select Drainage Components		
Prepare Drainage Plan and Profile		
Develop Drainage Details		

Construction Plans and Details

	Frequency	Criticality
Demonstrate Understanding of Legal Liabilities		
Identify Required Plan Sheets		
Produce Existing Conditions and Demolition Plan		
Produce Protection and Mitigation Plan		
Produce Layout and Materials Plan (e.g., site furnishings)		
Produce Planting Plan		
Create Details, Elevations, Profiles, and Sections (e.g., walls, pavements, structures, specialty features, green roofs)		
Collaborate on Supplemental Plans (e.g., lighting, irrigation, playground, wayfinding)		
Develop General Notes, Schedules, and Legends		
Comply with Code Requirements and Dimensional Standards		

Construction Specifications

	Frequency	Criticality
Develop Project Manual and Front-End Specifications		
Establish Submittal Requirements		
Prepare Bid Form		
Write Technical Specifications		

Bidding

	Frequency	Criticality
Establish Pre-Qualification Criteria		
Advertise Project for Bidding		
Respond to Bidders' Questions		
Prepare Addenda		
Tabulate and Evaluate Bids		
Recommend Award of Bids		
Support Contract Negotiation		

Construction Administration

	Frequency	Criticality
Conduct Pre-Construction Activities (e.g., walk-through, meeting)		
Respond to RFIs		
Manage Change Orders (e.g., bulletins, purchase requests, change directives)		
Review Submittals (e.g., shop drawings, materials submittal, product submittals, substitutions)		
Review Contractor Payment Application		
Conduct Site Observations and Inspections		
Prepare Field Reports		
Perform Project Close-Out (e.g., punch-list, substantial completion, guarantee period, final completion)		
Prepare As-built and Record Drawings		

Are there any job-related tasks missing from this survey?

- ◯ No
- ◯ Yes

If Yes, what?

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Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

The following questions are for statistical purposes only and your responses will be kept confidential.

* Are you a licensed or registered landscape architect?

- ◯ Yes
- ◯ No, but I am currently pursuing a license
- ◯ No

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

The following questions are for statistical purposes only and your responses will be kept confidential.

How long have you been licensed or registered?

- ◯ Less than 1 year
- ◯ 1-2 years
- ◯ 3-5 years
- ◯ 5-10 years
- ◯ 11-15 years
- ◯ 16 or more years
- ◯ I am not currently licensed or registered

How many licenses or registrations do you currently hold?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6+
- ◯ I am not currently licensed or registered

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

The following questions are for statistical purposes only and your responses will be kept confidential.

Which of the following BEST describes where you currently are in your landscape architecture career?”

- ◯ Currently enrolled in a landscape architecture college/university program
- ◯ Recent graduate from a landscape architecture college/university program
- ◯ Started taking the L.A.R.E. but have not completed all sections
- ◯ Recently completed the L.A.R.E. but not yet licensed
- ◯ Licensed/registered landscape architect
- ◯ Formerly Licensed/Retired landscape architect
- ◯ Full-time faculty member in a landscape architecture college/university program

How long have you been working in landscape architecture?

- ◯ Less than 1 year
- ◯ 1-2 years
- ◯ 3-5 years
- ◯ 6-10 years
- ◯ 11-15 years
- ◯ 16 or more years
- ◯ I am not currently working in landscape architecture

If you practice internationally, in which regions do you practice? *(Choose all that apply.)*

- ☐ Africa
- ☐ Central/South Americas
- ☐ Asia-Pacific
- ☐ Europe
- ☐ Middle East
- ☐ Australia

Please indicate your level of education? (Choose all that apply)

- [ ] Accredited landscape architecture degree
- [ ] Non-accredited landscape architecture degree
- [ ] Two-year technical degree or certificate
- [ ] Other bachelors, masters or doctoral degree
- [ ] Other two-year degree or certificate
- [ ] High School Diploma

How old are you?

- ◯ 18-25
- ◯ 26-35
- ◯ 36-45
- ◯ 46-55
- ◯ 56-65
- ◯ 66-75
- ◯ 76 or older

What is your gender?

- ◯ Male
- ◯ Female
- ◯ Non-Binary
- ◯ Prefer not to disclose

Which ethnicity best describes you?

- ◯ African American
- ◯ Asian/Pacific Islander
- ◯ Caucasian
- ◯ Hispanic/Latino
- ◯ Middle Eastern
- ◯ Multi-Racial
- ◯ Native American/Alaskan Native
- ◯ South Asian
- ◯ Prefer not to disclose

What is the size of the organization in which you work?

- ◯ 1 employee
- ◯ 2-10 employees
- ◯ 11-50 employees
- ◯ 51-100 employees
- ◯ 101-200 employees
- ◯ 200-500 employees
- ◯ 500+ employees
- ◯ I am not currently working

* In which sector are you currently or were most recently practicing?

- ◯ Public
- ◯ Private
- ◯ Academic
- ◯ Student/Recent Graduate (Unemployed)
- ◯ Other (please specify)

In which location do you reside?

- ◯ Alabama
- ◯ Alaska
- ◯ Alberta
- ◯ Arizona
- ◯ Arkansas
- ◯ British Columbia
- ◯ California
- ◯ Colorado
- ◯ Connecticut
- ◯ Delaware
- ◯ District of Columbia
- ◯ Florida
- ◯ Georgia
- ◯ Hawaii
- ◯ Idaho
- ◯ Illinois
- ◯ Indiana
- ◯ Iowa

- ◯ Kansas
- ◯ Kentucky
- ◯ Louisiana
- ◯ Maine
- ◯ Manitoba
- ◯ Maryland
- ◯ Massachusetts
- ◯ Michigan
- ◯ Minnesota
- ◯ Mississippi
- ◯ Missouri
- ◯ Montana
- ◯ Nebraska
- ◯ Nevada
- ◯ New Brunswick
- ◯ New Hampshire
- ◯ New Jersey
- ◯ New Mexico
- ◯ New York
- ◯ Newfoundland and Labrador
- ◯ North Carolina
- ◯ North Dakota
- ◯ Northern Mariana Islands
- ◯ Nova Scotia
- ◯ Ohio
- ◯ Oklahoma
- ◯ Ontario
- ◯ Oregon
- ◯ Pennsylvania
- ◯ Prince Edward Island
- ◯ Puerto Rico
- ◯ Quebec
- ◯ Rhode Island
- ◯ Saskatchewan
- ◯ South Carolina
- ◯ South Dakota
- ◯ Tennessee

- ◯ Texas
- ◯ Utah
- ◯ Vermont
- ◯ Virginia
- ◯ Washington
- ◯ West Virginia
- ◯ Wisconsin
- ◯ Wyoming
- ◯ Yukon
- ◯ North West Territories
- ◯ Nunavut
- ◯ Other (please specify)

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

In which type of firm do you work?

- ◯ Architecture
- ◯ Engineering
- ◯ Landscape Architecture
- ◯ Multi-discipline
- ◯ Construction/Contracting
- ◯ Planning
- ◯ Other (please specify)

What is your role in the organization in which you work? *(Choose all that apply.)*

- ☐ Entry-level
- ☐ Mid-level/Management
- ☐ Leadership
- ☐ Other (please specify)

Are you currently an adjunct faculty member?

- ◯ Yes
- ◯ No

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

In which type of department do you work?

- ◯ Parks and recreation
- ◯ Planning
- ◯ Public works
- ◯ Redevelopment
- ◯ Transportation
- ◯ Economic
- ◯ Other (please specify)

At which governmental level do you work?

- ◯ Local
- ◯ Regional
- ◯ State/Provincial
- ◯ Federal
- ◯ Other (please specify)

Are you currently an adjunct faculty member?

- ◯ Yes
- ◯ No

CLARB

Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

What program of study are you currently enrolled or recently graduated from?

- ◯ Bachelors of Landscape Architecture from an LAAB/LAAC accredited institution
- ◯ Masters of Landscape Architecture from an LAAB/LAAC accredited institution
- ◯ Bachelors of Landscape Architecture from an institution that is not accredited by LAAB/LAAC
- ◯ Masters of Landscape Architecture from an institution that is not accredited by LAAB/LAAC
- ◯ Certificate program in Landscape Architecture
- ◯ Other (please specify)

What year are you in your program?

- ◯ Recent graduate
- ◯ 1st Year
- ◯ 2nd Year
- ◯ 3rd Year
- ◯ 4th Year
- ◯ 5th Year

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Landscape Architecture Task Analysis Conducted by the Council of Landscape Architectural Registration Boards

* Do you also practice outside of the educational setting in which you work?

- ◯ Yes
- ◯ No

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Please enter the percentage of time you, as a landscape architect, spend in the following areas.

(Note: Your responses should add up to 100.)

Leadership and Project Management	
Inventory and Data Collection	
Stakeholder Engagement Process	
Physical Analysis	
Contextual Analysis	
Stewardship and Design Principles	
Master Planning	
Schematic Design	
Design Development	
Stormwater Management	
Grading and Earthwork	
Drainage Systems	
Construction Plans and Details	
Construction Specifications	
Bidding	
Construction Administration	

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Which of the following projects do you perform as a landscape architect? *Choose all that apply.*

- [ ] Agricultural
- [ ] Botanical gardens
- [ ] Campus and institutional
- [ ] Commercial and retail
- [ ] Corridor and transit
- [ ] Cultural and historic
- [ ] Ecological
- [ ] Feasibility
- [ ] Green roofs and walls
- [ ] Guidelines
- [ ] Industrial
- [ ] Interior
- [ ] Landscape planning
- [ ] Landscape research
- [ ] Master planning
- [ ] Memorial and cemeteries
- [ ] Parks and recreation
- [ ] Playgrounds
- [ ] Private gardens
- [ ] Residential
- [ ] Resort
- [ ] Rural
- [ ] Sport facilities
- [ ] Spiritual centers
- [ ] Theme parks
- [ ] Therapeutic gardens
- [ ] Urban
- [ ] Water
- [ ] Zoo

Are there any projects missing from this survey?

- ◯ No
- ◯ Yes
- ◯ If Yes, what?

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Is there anything that we did not include in this survey that should have been included?

- ◯ No
- ◯ Yes

If Yes, what?

Would you like to receive the results of the survey?

- ◯ Yes
- ◯ No
- ◯ If Yes, please leave us your email address.

Appendix B: Job Related Tasks Identified as Missing

Are there any *job related* tasks missing from this survey?
- Lighting design (understanding of low voltage and line voltages) - Irrigation design (although increasingly handled by manufacturer's experts) GENERAL: Missing differentiation between (1) identifying the work, (2) doing the work personally OR supervising the work, (3) directing others to accomplish the work accurately, and (4) supervising and approving the work products (QA/QC) - NOTE: all of these may be evaluated in the remainder of the task analysis but haven't seen those portions yet
- review drawings for owner standards and specification compliance; - SITES project designation/collaboration;
*Technical Abilities & Consultant Roles -> Bad drafting/not understanding consultant drawings is the biggest issue I see with entry level people. A large portion of these questions would fall into other consultants scope, so knowing what a landscape is typically responsible for versus specializing in a trade. Landscape architects are limited in most jurisdictions from creating water management & mitigation type plans, lighting etc. This would require a specialist or an engineer to get approved drawings. I wish CLARB would press more for what a LA stamp actually allows us to do. I do not know anybody with a landscape license only that would be performing lighting plans when all projects I am aware of would have the lighting plans per the electrical engineer (excluding landscape accent lighting). *Planning vs landscape architecture -> Vast difference in processes etc., so it is weird that these are always blended together that landscape is somehow the same thing as planning.
1. Respond to required changes in plans submitted for approval 2. Notify Owner (or Public Agency) of any discrepancies in approved plans
1. Evaluate need for drought resistant plant varieties. 2. Evaluate need for water conservation and water harvesting. 3. Evaluate plant selection versus maintenance costs. 4. Design of irrigation systems that conserve water. 5. Gray water reuse. 6. Plant varieties for erosion control, ie. wind and water. 7. Soil stabilization measures, retention basins, visual barriers 8. Study- evaluate alternative ground covers.
1. Evaluation of consultants 2. Review of Invoices 3. Creating an IFB. 4. Tracking hours. 5. Know Native Plants and Learn New Plants. 6. Running Meetings Efficiently
1. Growing medium analysis reviews, amendment &/or fertilizer recommendations. 2. Adaptation when site conditions aren't quite as expected, or when contractor does something that doesn't align with landscape plans but can't be undone.
1. What sub consultants are on your team. 2. Are you the prime or a sub consultant. 3. Typical project locations: urban, suburban or rural or public lands. 4. When were you licensed? BLA or MLA or multiple degrees.
2. Inventory and Data Collection: cultural resource surveys/inventories 3. Stakeholder Engagement Process: Coordination with tribal governments outside of a community engagement process; Development of inadvertent discovery plans/archeological monitoring
3-d modeling Social media
A lot of my work is coordinating with consultants on how we would like them to perform their work.
Addressing environmental regulatory permit requirements, land use regulations, utility contract & designs
Adherence to safety and PPE standards. Conducting public involvement/presentations. Managing consultants/third parties.
Apply aesthetic design standards based on creativity.

arbitration
Architectural Aesthetics i.e. design for concrete formliners
As a manager of landscape architects additional tasks include writing job descriptions, hiring, managing, performance reviews, and disciplinary actions. As a collaborator a landscape architect's tasks include coordinating the work of, reviewing the work of, and communicating with other technical professionals and stakeholders on a team.
As the City Stormwater Manager, I frequently handle Citizen drainage complaints and work with City personnel to address the issue at hand.
assessment of current and future maintenance practices.
Assisting clients in securing funds for design and/or implementation.
At each stage of work, to audit and identify items of potential harm to the public
Budget related activities; Council reporting and responses to public inquires/requests; Collaboration with other disciplines e.g. Engineering, Transportation, Building projects, Sustainability and Environmental issues, etc.
Business and financial management of the practice.
Business Development
Business development
business development, marketing materials, respond to RFPs / prepare proposals
but no...I wouldn't couldn't have listed this many tasks...sort of crazy LA's do so many. btw, many of these tasks; stormwater and drainage tasks I've listed as seldom are issues we perform often, though work closely with civil engineers as the leads, being these tasks, especially large scale projects are a bit outside LA registration and very critical to the success of projects.
calculations and tabulations for tree and vegetation mitigation, exfiltration and swale capacity calculations.
character sketches & graphics
Client contact and discussions, confidential and group meeting/discussions Multi-disciplinary team contact and discussions, confidential and group meeting/discussions Office in-house staff contact and discussions, confidential and group meeting/discussions General communications, email, meeting notes etc.
Client Contact and Management
Client education, plant sourcing
Client management
Client Meetings Contractor Meetings Nursery Visits
Client meetings Public Presentations to regulating agencies Review Environmental Documents CEQA, EIR Submit to local city, county agencies
Collaboration of plans between disciplines - especially architecture and civil engineering. Managing and collaborating with sub-consultants. Managing tasks according to scope, managing staff on schedule.
Collaboration with other disciplines (Civil, Arch, etc) Managing Consultants
collaboration with other professional consultant architects, engineers, attorneys, etc.
Communicating project progress with project manager and stake holders. Design co-ordination with other consultant team members.
Communication with team consultants including contractors Maintenance of task records for billing identification and attention to third parties

Community Engagement / Social Equity Professional Ethics Business Development and Marketing Materials Research and Selection Lighting Design Irrigation Design and Water Conservation
Concept plans , perspectives and renderings.
Conduct and formalize construction progress meetings.
Conduct or consult on hazardous tree and invasive species mitigation.
Conduct/participate in public/client involvement in project planning, & preliminary design.
Construction design and detaiing (decks, docks, stairways etc). Also. Design professionals should never call their drawings "As-Builts" GC's submit as-builts for changes in the field. Professional converts as-builts from GC to project record drawings. Without construction supervision role, As-Builts are the GC's responsibility.
Construction Documents-Review other consultants plans for design intent, technical compliance. I think that is different than "collaborate on supplemental plans". Reviewing civil drawings, structural drawings, etc.
coordinate on environmental and traffic related issues prepare graphics sign and seal drawings
Coordinate with consultant team members
Coordinate with other disciples to create base plan. Planting plans, research of products and plant materials.
Coordinating complex projects with consultants - strucutral engineer, architect, waterproofing, etc.
coordination and directing other disciplines
Coordination emails Document preparation and writing
Coordination of drawings with other allied professionals.
coordination of sub-consultants; survey, structural engineer, civil, electrical engineer, irrigation sub, architects
Coordination with design/consultant team.
Coordination with other project consultants
Coordination within interdisciplinary teams.
could add questions related to Design-Build risks and coordination; prep of field sketches during construction; tree/plant tagging; review & documentation of damage of existing utilities/objects during construction by the contractor; understanding of climate impacts on plants and materials during construction (freezes, flooding, heat stress etc.); coordination with other professionals: arborists/horticulturalists, architects, engineers, geotechs, etc.; post construction evaluations.
Create something beautiful
Create supplemental plans: irrigation, playground, wayfinding, lighting. (we don't collaborate on these, we do them ourselves).
Create SWPPP Reports, SWPPP/Erosion Control Inspections
creative genesis
creative thinking
Design and prepare Irrigation plans Water use Calculations Schedules for irrigation Water pressure calculations for irrigation system Compliance with local and state irrigation requirements/regulations
Design build question,
Design workshops/charrettes Employee performance reviews/evaluations
Design-Bid-Build work flow, residential design process directly with homeowner, and working as a sole proprietor don't seem to be represented well in these tasks.

develop renderings and visualizations
Developing fee proposals, Managing budget as it relates to Landscape Architects fee, and Client managment
Development of tree preservation and replacement plans.
Document site using UAV technology- audit progress
Draft using autocad or similar program. Participate in Lessons-learned after contracts are complete. Weed and Pest Control Plan evaluations. Staging plan evaluation for re-use of on-site materials.
Ensure plant material is available locally Coordinate projects with schedules of contractors that I work with Provide homeowners with samples of hardscape and other materials Grow own plants to learn which grow well in our area
Ensure projects are designed and installed in accordance with any/all environmental permits i.e. Army Corps Section 404 permit, Regional Water Quality Control Board 401 certification and, or Construction General (Stormwater) Permit, California Department of fish & Wildlife streambed alteration agreement, Project SWPPP and, or USFWS' Biological Opinion (Conservation Measures therein) and CEQA's MMRP requirements.
Environmental Assessment and Environmental Impact Statement, especially cumulative effects. Also Corps of Engineers 404 process and related environmental processes. Work with Tribal Governments at all levels, from housing to endangered species. Also revegetation and habitat rehabilitation work.
Environmental design, Wetland design foe environmental improvement and water purification, irrigation design for water conservation, including basins for collection and storage as well as pumping and delivery systems, lighting design, most critical to aesthetic compatibility,
Evaluate suppliers' costs and conduct planting inspections, identifying potential planting and tree deceases. Collect "bird's opinion" and other pollinators for efficiency of planting selected and identifying problems that homo sapiens generate to them
Evaluation of government policy changes.
Everything plant and soil related. Why are there so many questions related to planning?
Expert witness testifying
Explaining the process to the Owner.
facilitate meetings coordinate interdisciplinary work public presentations and project outrach
fedgrsfersdgfersdgfersdgfersdg
Field photography
financial administration
Flag and layout plants on site and perform one call to locate underground utilities
Forecast project budgets, develop risk register (identify, assess and plan for mitigation of risk)
FRDGFSDGFSDGVFSDGFRSDGFERSDG
Functional Landscape Ecological Design of construction disturbed site Functional Landscape Ecological Restoration of construction disturbed site Nonpoint Source (NPS) pollution control plan Stormwater Quality Protection Plan (SQPP) Stormwater Runoff Pollution Control Plan Stormwater Runoff Mitigation Plan Integrated Vegetation Management Plan (IVMP) Receiving Pervious Area (RPA) Design
Government administration and oversight of development, projects, etc.
Graphic and illustrative representation
Graphic Design Illustration creation 3D modeling 3D rendering
graphics especially 3D

Hard to make these answers work for a design/build company like mine
How much is contracted out... and there fore the preceeding questions somewhat do not apply... you oversee but do not do this directly
Human resources management Invoicing
I also spend a good amount of time on Marketing, billing and bookkeeping.
I am a residential landscape architect that works as a landscape contractor for my own projects and those of other landscape architects and designers. I have extensive site work and design credentials for a contractor and make this my nitche. It would be good to qualify the questions above to the types of work each landscape architect is doing.
I don't see any mention of operations and maintenance which is critical and often over looked by LAs in general.
I spend a lot of time discussing projects with subject matter experts. These may be colleagues (I work in a National Park), consultants or agency staff. Consider representing the LA's role in these consultations and subsequent integration of specialized information in planning, design, and construction.
I think it is implied in some of these - but communication with other design disciplines. (engineers, architects, etc.)
I use Sketchup for developing concepts, details, for determining scale, site graphics, designing in 3D which is very important. Most LA's develop plans in plan view. Sketchup forces you to think in 3D at a scale of spaces. Sketchup can be used on the front end, middle and back end "Marketing" of a project.
Identify and pursue funding mechanisms
Identify existing and proposed utility needs, Right of Way acquisition needs, Existing conditions - title reports and easements that encumber property. Traffic analysis impacts especially over a 20 year period, Stormwater requirements both quantitative (Detention) and Qualitative (BMP). Your survey is well thought out - some of what I added are included in some format.
Identifying and managing the company fees and services, preparing fee proposals.
Identifying funding. Capital budgeting. Grant Writing. Owners Representative during construction (if not performing direct construction inspection). Actually conducting public meetings (not just designing the plan). Preparing technical memoranda and items for public bodies. Some of these tasks are required on the public side but private sector might not do them often.
Identifying, finding, tracking, researching potential clients and plans of attack on getting projects.
In master planning - coordinating with different divisions.
Interaction and coordination with Architect / Engineers regarding: programming, which utilities take highest precedent, alignment of utilities, accommodation of special conditions. Recommend a section for Environmental Work: Document research, Site Investigation, Site Findings (especially subsurface / groundwater impacts), Remediation development / plans, and actual Remediation Also, if the public is involved with aspects of the project, there should be a completely separate section for those parameters.
Interactions with Clients and Contractors. Presentation techniques and to whom.
Interdisciplinary design reviews Inspections
interface with the public and stakeholders on publicly funded projects. This is a major component of our public projects.
In-the-field work such a planting / installation

Irrigation design
Irrigation design
Irrigation Design!!!!!! It says: Collaborate on Supplemental Plans (e.g., lighting, irrigation, playground, wayfinding) What a joke!
Irrigation Design, Irrigation Plans, System layout vs Hydrozones, Irrigation Calculations "Water Efficient Landscape Ordinance" Irrigation Coverage Teats and Irrigation Audit Guidelines/Requirements
Irrigation Design, Low Water Use
Irrigation evaluation, Permitting for wells, potable water, controller installation, electrical connections, all County permits, andSouth Florida water well permits.
Irrigation plans and their development; review and documentation of existing irrigation systems
Irrigation plans!
Irrigation should be its own category. This is important for Landscape Architects to understand.
Just an observation on question 'Conduct Site Observations and Inspection' I would suggest removing the work 'inspections'. Design professionals observe construction progress. However, they do not 'inspect' the work. According to law and liability insurance carriers, the word 'inspection' indicates the designer has a role in the contractors quality control.
Landscape Architects often have purview over site lighting / photometric design and irrigation design. Perhaps green roof design or on-structure planting, hardscape, and amenity design is missing as well, which differs in liability and significance from at-grade related scope.
Landscape-related services : - material selection - field layout - installation direction/supervision
Level of communication participation at both client and contractor level. The importance of transparency with community understanding and entitlements
Licensed Landscape Architects that review and approve landscape construction plans for issuance of building or grading permits with local jurisdictions. Knowledge of codes, ordinances, regulations relating to landscape improvement plans, including efficient irrigation systems.
Lighting plans; signage design
Low Volt Lighting Design
maintain project notes: client decisions, conversations, timelines, expectations (different from field reports - more inclusive of the entire project duration)
Maintenance & Operations tasks are oversimplified and there was nothing substantial on 1-3 yr -5 yr performance checks
Maintenance training, site use observation after construction
manage team, team members
Management of a team / department. Running a business tasks.
Management of staff
Management of younger LA's with 15 years or less of experience. The level of understanding has evaporated as technology has "improved" - misnomer. The KSA's of individuals has fallen completely off the charts now. No skills, and NO desire to broaden their horizons or understand the "why" in doing things correctly. Understanding what P.O.B. means to the project is a prime example. 95%+ won't have that on the drawings. Didn't that used to be a fail?

Managing other landscape architects and review their works coordinate and co operate with other electro mechanical structure team
Many Landscape Architects work in actual construction, these questions are primarily designed for Landscape Architects that work in the design office.
Many LA's are reviewers of plans rather than makers of plans. That job has a higher criticality than making plans, and often the reviewers have a higher skill level.
Many tasks that are listed are performed by other professionals.
Marketing
Marketing Recruiting Training
Marketing and Building a practice. Negotiating fee's. Negotiate account receivables and dialogue with clients regarding outstanding billables. Determine market focus, develop strategies for identifying and entering future markets. These skills are necessary to build and maintain a viable and sustainable practice and workplace for employees and thus perpetuating the practice of Landscape Architecture.
Marketing and business development efforts.
Marketing needs such as pursing work, business development, responding to RFP's and RFQ's. Business leadership needs such as managing firm finances, utilization, profit/loss, hiring/firing, etc.
marketing one's firm, website creation, social media engagement, dealing with solicitations from businesses, hiring and training of employees, interns, or consultants, client relations and management, overseeing and/or doing maintenance of project after installation, networking to get new clients, taking courses to accrue required continuing education credits, operating within a budget to maintain firm's economic survival, knowing which clients to pursue and which to not pursue, keeping up with industry trends, attending industry conferences, volunteering la work for one's community
Marketing, Proposal Writing, Developing and maintaining client relationships, balancing project budgets, billing, collections
Marketing, scheduling, firm management, financial aspects of running a business, legal implications
Marketing-related tasks: respond to RFP RFQ
Master plan reports, as a project type Operations and management plans
matriculation of LEED/SITES points into design and construction process.
Maybe you covered but without going back. Signing Contracts, writing proposals, submitting Liability insurance , jurisdictional licensure, stamping drawings , zoning submissions and process , entitlement processes and work products, expert testimony, producing public exhibits, 3D renderings for public record . Advising clients in public process and approvals , submitting drawings for site plan permit, grading permits , building permits, bonding, calculating landscape bonds.
Mediation between city officials, clients and my bosses to achieve project approval. Bosses are engineers and clients are developers.
Mentoring of supervised staff (project management, technical aspects, contract administration, etc.)
Most do not apply if not working directly in LA related-profession - however, skills are transferable to other professions and can be used due to basic knowledge of LA skills. This survey does not explore this aspect at all and even though I answered that I was not working in the profession, all questions seem to relate only to those currently working in the profession.

Most large products involve a design team. Desig professionals need to know enough about each other's role to coordinate BMP's. Most of the drainage and grading questions don't take into account the integration of the Landscape Architect's and Civil Engineer's role in planning and design. "Yes" LA's do that task, but part of a team.
Most of my work is evaluating the work of others and developing new procedures.
Multi-disciplinary project management Business development Mentoring staff
My company is small and does mostly residential work, so much of this does not apply.
My work has been in the City/County/Park planning arena. therefore, my role as a landscape architect is not the typical one
My work is primarily design/build directly for an owner. A lot of the questions above do not pertain to me or the way our firm performs work.
N/A
na
Native plant propagation inventory for site restoration projects on ecological restoration. Seasonal monitoring on invasive non-native plants. Seasonal availability lists on native plants in local nurseries for site restoration work.
NEPA Compliance, Wetlands work (ie, identification, delineation, permitting, mitigation). Multi-disciplinary team management.
New development of materials, technology
no
no
no
no
Not much emphasis on planting design, schedules and specifications.
Nothing for academic practice for those of us who are both landscape architects and professors
obtain permits from environmental regulatory agencies
Office administration related tasks such as the development of health and safety procedures (CORE), staff training / supervision, time management, payroll, etc.
Office and staff related tasks.
Office/business administration
One example... I work in a facilities management role where 75% of my day is responding to RFIs, but not as a part of Construction Administration. And everything else that I gave a response other than 'Never Perform' is related to that work in Facilities Management, not in traditional landscape architecture.
onsite meeting with client
Operations and maintenance
Organizational develoment, strategic planning, executive leadership and interaction with elected officials and coordination with other professional disciplines.
Other Utility design
overall coordination with affiliated professions such as civil engineer, architect, structural engineer, soils scientist, etc.

Owners Representative questions
People Management.
Perform risk analysis and determine approach for legal issues.
Perform visual impact analysis Collaborate on ecological restoration Design complete streets and green streets
Performance evaluation of plans and designs
Perhaps should note collaborations with other disciplines - civil engineering, electrical, structural, mechanical, architectural, planning, environmental etc.
Permitting process through highway occupancy
Personnel Management, Transit, Transportation, Bicycle, Pedestrian, Diversity, Equity and Inclusion
Plan and facilitate public participation and stakeholder identification/input
Plant sourcing from nurseries, contract grow, facilitating maintenance period
PLEASE STOP.
Policy development and public administration for landscape planning, compliance, and management.
Post Construction evaluation to assess what was learned during the project and how to improve the process for the next project.
Post occupancy evaluations
Pre-construction meeting with general contractor and subcontractors to clarify project scope, goals and expectations
Preliminary design proposal. Visual Presentation like sketch, 3d models and etc.
Preparation of lighting, electrical, swimming pools, water features, outdoor dining facilities, site structures (pavilions, bridges, cabana's, funicular, sports courts, field houses.
Prepare and evaluate Irrigation plans, playground design plans.
Prepare economic impact assessments for urban revitalization strategies. Develop strategies for urban revitalization. Develop strategies for preserving historic urban landscapes
Prepare Irrigation Plans, water use analysis, identify hydrozones, size lines, specify equipment and all other requirements.
Prepare legal documents, Prepare and review sensitive materials and documents, Prepare board memos, Attend meetings, Coordinate with stakeholders, Public presentations, Grant writing and administration.
Prepare maintenance plans, meet with maintenance staff post close-out to discuss best maintenance practices
Prepare marketing and business development materials
Prepare Permit Drawings Consultant coordination Internal team coordination
Prepare planning documents?
Prepare project status reports
Prepare stream restoration plans Prepare wetland restoration and mitigation plans Prepare forest fuels reduction and management plans Prepare ecological landscape plans (native plants in natural community assemblages)
prepare subdivision plans, wetland mitigation plans, streambank and buffer restoration plans, utility and swale profiles, general office accounting, plan project management, environmental permits.

Preparing LEED and SITES documentation.
Pre-qualification on front end. Maintenance recommendations.
Presentations, graphic production, client communication
Presenting concepts to stakeholders Attending Planning Commission / Board of Zoning Appeals Meetings
presenting projects in front of review boards for municipal approval; acting as a liaison between client and council, representation on client's behalf
Presenting projects to Planning and Zoning/ community meetings; Collaborate with Architect on siting of buildings: review and approve submittals and photos of plant material
Produce irrigation plan or water budget.
Produce Irrigation Plans, Produce Hardscape/Site Design Plans, Produce Tree Removal Plans
Produce Utility Plan and Profiles
producing graphics, running public meetings, coordinating with other disciplines
Producing Irrigation Plans w/ MWELO calculations; and Planting Plans w/ Shade Calculation
Project Management - supervisor of staff Coordination of governmental/city agencies and following guidelines Budget approvals - Managing budgets and staying on budget and on schedule Owner - Managing and selection of professional services RFP's - review and selection of professionals
Project management questions - creating a team, working together, collaborating, etc.
Project management, business development, invoicing, forecasting, team management
project management, this is an important part of the design/build sector. Everything on this list concentrates on the public sector that I did work in, but does little to address how this would differ in design/build.
project progress meeting attendance
Project schedule management Project budget management Secure project funding sources Project change control
Project-Specific Output Specifications (PSOS) a term used in Ontario and Canada to describe the technical performance requirements for a project that allow proponents to bid. Typical for large-size public projects developed under a private-public partnership (P3).
proposal preparation
Provide 1-year (or as specified) warranty reviews to determine compliance. Review Operations and Maintenance during warranty periods.
provide design solutions due to field condition and unforeseen conflicts. Recommendation on material substitution when specified material is not available. Test irrigation system for coverage.
public engagement, public presentations, media interviews, indigenous interests and engagement, coordinating work of professional sub consultants as prime consultant, invasive species management, tree protection and removal planning, riparian and foreshore works,
Q&A throughout project, teaching other newer professionals to perform project tasks and identify issues.
Quality control and quality assurance of documents and drawings being issued.
Questions are geared towards Landscape Architects who design and prepare design contracts. There is nothing related to those of us that work within a public sector environment where the primary role is to regulate or create policy or master plans.
Relationships with other disciplines (residential, developers, architects, civil ect.), coordination meetings

report writing professional client relationship building
Research Community outreach landscape performance Life Cycle Assessment Resilience Economic Analysis
Research and evaluate products Coordinate with consultants/allied professionals
Research and report writing, preparation of interpretive signage and wayfinding signage
Research Phase
Research prior development on the property and determining existing condition constraints and opportunities. Interpreting site knowledge to other members of the design team such as architect, civil, electrical engineer. Predicting avifauna trends on site based on existing and proposed changes to vegetation and food sources.
Research understanding, meaning referring to research documents, papers, studies that are published in scholarly journals. This relates to sharing/disseminating knowledge from practice at meetings such as ASLA, CELA.
Researching new products and information as technology changes
responding to RFPs
responding to RFPs Coordination with other disciplines (joint meetings to discuss site layout, drainage, materials, etc.. Preliminary circulation plans that can be given to engineer for development of CDs.
Responsibility for communicating safety protocols to our staff, consulting parties, and clients. In my practice, our staff have "stop work" authority should they observe an unsafe condition.
Review Plant List for size of Box Trees, be on site for delivery & installation. Make sure that all workers are safe around equipment & during hole opening for each box tree. On site Safety is # one priority during construction! Also large grading equipment on high slopes should be noticeable in order to protect workers & Landscapers down on lower slopes. Again safety is #1 priority.
Review work of other aligned professions for compatibility, conflicts
review work progress and adherence to specifications.
-Reviewing or conducting arborist reports. Creating tree protection and mitigation plans. -Recycled water compliance for new and existing irrigation systems. Creating irrigation plans coordinating with the city and other project team members (Civil, MEP, electrical).
Reviewing Plans for Approval and Permitting
RFQs, Marketing, Client Relations
roadway alignment/design, retaining wall design, NPDES Permitting, small structures such as decks, parking lot design, pavement design, swimming pool design, use of graphic software such as REVIT, BIM, etc.
SÃ©lect and approve plant material
Sales presentation, selling the ideas
Schedules and deadlines.
Seems fairly heavy on stormwater/drainage, and light on anaylsis and understanding related to land ownership, legal boundaries, setbacks, easements. Does all that fall under analysis? If so, why so detailed on stormwater? Also, completely missing irrigation systems, which we do very often. For us, its not 'supplemental'. Also, would need to page back but I don't recall anything on ethics, or regulations specific to the practice of LA. But that would be tough given regional differences.

SELF REFLECTION & DIVERSITY AND INCLUSION!!! I struggle to stay in this profession as a Black designer. Many landmark firms doing Urban Design work don't address their own identity in relationship to the identities of the communities they serve/people they employ. There is seldom self-reflection around teaming projects and self analysis for cultural competency. I am not hopeful this organization will capture this, but would be helpful to know how practitioners/design leaders reflect on their identity, race specifically, and its power dynamic to communities (and BIPOC employees).
Serve as expert witness in adjutication process.
software related tasks - GIS, REVIT, Sketchup, etc...
Specifying site elements, such as furnishings?
Staff Development, legal and risk assessment reviews, licensing tracking
Stakeholder Engagement Process, Public Presentations, response to RFQs, Conformance of construction documents, project cost estimates, etc.
Staying abreast of current CLARB and LARE requirements for future employees to help train and understand testing conditions; figuring out what is expected of "21st" Century LA's for the new industry standards since they are rapidly changing. The resources for testing are scarce. Every year there's an increase in what is expected for testing while simultaneously decreasing the availability of knowledge and acceptance of sharing ideas; for fear of "devaluing" the profession. The allowance of obtaining what is truly required for each section is becoming clouded and increasingly retained. Strict measures are taken, only partially understandably, to protect the information required to move forward as a confident addition and Certified member for this unique position in the community. Things are becoming gate-kept, even for seasoned professionals, for how this industry is changing and what is required to maintain the community's Health, Safety, and Welfare. To improve as a Landscape Architect, or any profession for that matter, sharing and exchanging industry requirements and protocol/logistics should be public knowledge and readily available for those wishing to strive in the industry vs. obtaining minimal exposure to a decreasing pool of expertise. If "cheating" is a fear, then a LARE or CLARB/similar-sponsored forum/online study location with a constantly updating list of available resources for each section would significantly increase passing rates. While still maintaining the prestigious status of Landscape Architecture, indistinguishable from any other Engineering or Architectural Profession. Measures can be taken to ensure that every profession is carrying out proper design and practice. Inspections, peer-reviewed work, and sharing of processes throughout professions on every project can ensure everyone is on the same page and up to standards. There needs to be a break in pointing fingers when something goes wrong and working as intermingled professionals to communicate and solve problems, hopefully on paper, before initialization. Trying to stay in the loop for the community and how, culturally, criteria are advancing in design and construction.
Subconsultant management, Permitting and Agency coordination and utility research and base data documtatiion
Substantial Completion and Final Acceptance Field Reviews and Punch lists Plant Material review and approval before delivery to the job site On-site review of tree, palm and shrub bed layout prior to installation Coordinate the work of subconsultants that contract directly with the Landscape Architect Coordinate the landscape architect's work with subconsultants that are retained by the Owner Prepare and update the site specific site plan used by the project team as the base map Locating the project team site plan on the site via dimensions and coordinates tied to reference points
Supervision and tracings of staff Record keeping

Tasks related to Visual presentation of designs, display and stakeholder info graphics and meeting presentation graphics.
Tasks specific to Irrigation. Tasks specific to plant identification and appropriate plant selection. Maybe tasks specific to plans production, drafting, CADD.
Teaching
teaching
Team task management and deligation
Technically you have covered all the job related tasks, however, this focuses specifically on the minutia of working in an office, and does not seem to cover the broader implications of what our profession should be doing. There should be a much larger emphasis on sustainability and the direction our profession needs to be taking.
Temporarily no
The entire scope of irrigation design, central control programming, irrigation storage pond/ tank design and irrigation water management.
The preparation of plans by a landscape architect for the following: Playground design, irrigation design and wayfinding. These were included as collaborative tasks, but many landscape architects, myself included, provide these services in house.
The preparation of up-front bidding contract documents is missing, and our firm is routinely required to develop these conditions.
The stormwater is more focused on QWEL standards and as such so are the planting plans. The water usage must be accounted for.
There are many jobs that landscape architects do that are adjacent to traditional practice. I manage a public art program for a municipality. The structure of this survey doesn't allow for me to communicate that properly. Many LAs work in the field of public art - might be interesting for you to know this.
There are much things in this survey
There has to be! But I don't know what? Also you need more of a gradient on the public harm portion.
There is an assumption that landscape architects are working in the private sector. There are many tasks associated with public sector jobs which are partially represented here, but not properly represented. Document review. Developing specifications, all of the tasks in the public sector are a little different and do not follow design process in the order or way presented here. These tasks can be very critical.
There is only one line for a Planting Plan under Construction Plans and Details, and there is no mention of Plant Field Selection under Construction Administration, or Field Observation of Installed Plants under Site Observations. Since some landscape architects can be seen as not knowing their plants, I think it's important to emphasize design, ecological and horticultural knowledge of plants in this survey.
Thereâ€™s too much data trying to be gathered here with this survey. Finding a meaningful trend with this granular of detail, that varies day to day and project to project, isnâ€™t particularly useful because the picture it paints is too muddy.
Time management and recording of billable and non-billable time.
too tired to figure out.
Traffic analysis study interpretation. Geotechnical study interpretation.
Training of new hires / recent graduates

Training/mentoring for project management/professional development
transportation related tasks
Tree removal Tree protection Special Permits (filing) Notice of intent (filing review)
User evaluation or observation
Value engineering Critical path scheduling
very thorough list
Water conservation
We now conduct Fire Management Plan review and execution in plan sets
Weekly Meetings/Check in's with coworkers and staff. OAC Meetings with Clients.
Well, I am a researcher (two books, over 400 publications), and in many ways my job is to quantitatively assess new and emerging design treatments and develop new techniques, assess new materials, and develop new ideas/theories in design. At times, its is quite different than the many typical activities of the practicing professional
What are you teaching in school? The design studios teach not one skill that is useful and there teaching methodology is going to tank the profession. Collaborative learning is invalid. Students do not teach students because they don't know anything. Besides, not one studio taught a planting plan, grading, irrigation etc. lofty ideas are nice but if you don't know how to bring them into reality. They are useless.
While I like the combination of supplemental plans to expedite the survey, some of these plans would be good to pull out separately. There may be some of those plans that aren't performed as often or with as much criticality as shown above.
Who knows, this thing. Is driving me nut, Hey this thing is driving me nuts. Iâ€™m an old 85 year old landscape architect that worked on significant projects in California. Still am a bit. I provided landscape architectural services primarily for architects on larger, public funded projects.
working with grounds/ landscape maintenance?
Working with people: Managing direct reports. Client relations. Stewarding resources.
Working with surveyors to complete site surveys, which includes but not limited to establishing limits of survey, requirements of information gathered for survey and costs to complete the survey.
Write proposals, Evaluate staff, Hire employees, Market services
Writing Visual Impact Assessments
Yes

** Note: Responses are listed here exactly as they were entered into the online survey. No edits were made to participants' responses.*

Appendix C: 2022 CLARB Job Task Analysis

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
A	Project Management			
A.01	Develop and Manage Contracts	additional services	ability to address scope creep	AIA/EJCDC documents
A.02	Select and Manage Project Team	codes, ordinances, and regulations	ability to define scope	codes, ordinances, and regulations
A.03	Determine and Manage Project Scope, Schedule, and Budget	contract law (e.g., arbitration, mediation)	ability to develop QA/QC process and plan	contract templates and resources
		contract organization	ability to organize and analyze information	human resources
		deliverables and exclusions	ability to select and manage a project team	licenses and certifications
		ethics and conflict of interest	behavior management skills	precedent and industry standards
		indemnification	budgeting skills	project management software (e.g., Deltek, SAP)
		industry standards and guidelines	conflict resolution skills	QA/QC checklists
		invoicing	emotional intelligence	subconsultants/SMEs
		liabilities	ethical	
		limitations of tools and technology	forecasting skills	
		master service agreements	risk management skills	
		project delivery methods (e.g., design-build, progressive design-build, GMP/IPD, CMAR)	technology management skills	
		project scope, schedule, and fees		
		QA/QC process and plans		
		resource allocation (e.g., staffing, COI, equipment, tools, software)		
		roles and responsibilities		
		types of costs (e.g., capital operational, fee-based, life cycle)		
		when to bring in subconsultants or SMEs/limits of practice		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
B	Inventory and Data Collection			
B.01	Collect Related Policy Documents	accessibility requirements (e.g., universal design)	ability to assess existing conditions	baseline studies and reports
B.02	Assimilate Information from Previous Planning Processes	archeological, cultural, and historical resources and context	ability to find and interpret codes	checklist
B.03	Conduct Onsite Investigation and Fieldwork	circulation patterns and volume (e.g., multimodal, parking, speed, traffic calming measures, existing intersections, signage, roadway width and signalization)	ability to identify critical information	data recording devices
B.04	Document Site Data	climate change / resiliency planning (e.g., extreme weather, temperature, salt water intrusion into ground water, storm intensity, wildfire)	ability to identify data sources	field notes and photography
B.05	Identify Adjacent Land Use	codes, ordinances, and regulations	ability to interpret geotechnical reports	government databases (e.g., EPA, EJ, FEMA, flood maps, national wetlands inventory, census data)
B.06	Collect Contextual Data (e.g., natural systems, road networks, demographics, cultural and historical)	contaminated sites (e.g., brownfields and landfills)	ability to interpret surveys and aerial photography	site inventory tools
B.07	Research Codes, Ordinances, and Permitting Requirements	crime prevention (CPTED) (e.g., crime reports and trends)	ability to synthesize and identify applicable data	software (e.g., GIS, CAD, BIM, photogrammetry, Google Earth, Recap, databases, scheduling)
		cultural landscape and heritage areas	collaboration	subconsultants (e.g., arborists, engineers, archaeologist, land surveyor)
		data collection methods	communication skills (e.g. data collection, dissemination of data, client-facing, oral, graphic, presentation)	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		demographics (e.g., mobility, accessibility, DEI, age, culture, socioeconomic, race, density, population, community patterns)	data management skills (e.g. cataloging, information management, organization, file management)	
		ecology (e.g., native, local environments, natural systems)	Research (e.g. qualitative, quantitative, suitability, primary sources)	
		environmental and social equity		
		environmental conditions (e.g., solar aspect, wind, soil types, erosion, noise, smell, photometrics, glint/glare, albedo, permeability)		
		existing hazards		
		existing reports and studies		
		flora and fauna (e.g., plant hardiness zones, wildlife patterns, wildlife habitat, fuel loading/models, invasive species, plant identification, endangered/threatened species, pests and diseases)		
		geography		
		geotechnical reports (e.g., water table, soil bearing capacity, depth to water table, subsurface constraints, soil contamination)		
		hydrology and hydraulics (e.g., floodways, flood plains, aquifers, drainage, sediment control)		
		irrigation (e.g., waterflow, source, supply, pressure)		
		property-related constraints (e.g., easements, entitlements, setbacks, deed restrictions, covenants, servitudes, utilities)		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		regional context (e.g., adjacent land use, zoning, future land use, connectivity)		
		site survey and as-builts (e.g., boundary surveys, planned development documents (PD), survey types, benchmarking, easements, entitlements)		
		soils (e.g., composition, types, pH level, contaminants, texture)		
		topography and slopes		
		utility systems and infrastructure (e.g., overhead and underground easements and right-of-way, public and private)		
		visual resource assessment methods		
C	Stakeholder Engagement Process			
C.01	Identify Stakeholders	audience (e.g., demographics, internal vs external, etiquette, decorum, expectations, cultural norms, issues)	ability to be impartial	AV equipment
C.02	Coordinate with Governing Bodies	codes, ordinances, and regulations	ability to be open-minded	camera
C.03	Support Public Participation Process (e.g., consult with clients, summarize feedback, communicate deliverables)	Diversity, Equity, and Inclusion (DEI) (e.g., cultural norms, language barriers, representation of participants, accessibility needs, multi-generational participation)	ability to build consensus	census data (e.g., American Community Survey (ACS)
C.04	Evaluate Design Based on Feedback	engagement strategies, preparation, and techniques (e.g., design charettes, pubic meetings, interviews, townhalls, online meetings, pop-ups, surveys)	ability to engage and obtain buy-in	consultants and SMEs (e.g., arborists, language interpreters, public engagement specialist, moderators, facilitators)
C.05	Obtain Public and Private Approvals	forum facility size, scope, and scale (e.g., available technology, materials)	ability to prioritize stakeholder goals	facility and equipment (food and beverages, staff)

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		how to design a public engagement process that is appropriate for the project, budget, and schedule	ability to read a room	feedback collection materials (e.g., real-time data collection, comment cards, polling, digital polling, QR codes)
		how to normalize data (e.g., record data and document outliers, identify trends)	ability to restructure public engagement to fill in any identified gaps in representation	project information (e.g., collateral, handouts)
		interviewing techniques	ability to synthesize data received against demographics targeted (e.g., representation, key stakeholders)	project maps
		local and regional context	adaptability	recording device
		methods to record engagement outcomes	ask compelling questions	S.W.O.T. Analysis (Strengths, Weaknesses, Opportunities, and Techniques)
		notification and advertisement methods (e.g., social media, mailers, door-to-door)	communication skills	security
		social risk (e.g., what is important to a community, critical topics for a community)	conflict resolution skills	sign-In Sheet
		team members needed for meetings	creativity	software (e.g., digital polling, virtual meeting, online surveys, project website)
		when and where engagement is needed	emotional intelligence	writing materials (e.g., post-its, trace paper, markers, etc.)
		when to implement public and stakeholder engagement	facilitation skills	
			listening skills	
			negotiation skills	
			patience	
			presentation skills (e.g., graphically, orally)	
			public speaking skills	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
D	Physical Analysis			
D.01	Determine Appropriate Types of Analyses	circulation patterns and volume (e.g., multimodal, parking, speed, traffic calming measures, existing intersections, signage, roadway width and signalization)	ability to assess existing conditions	communication tools (e.g., presentation software)
D.02	Perform Vegetation Analysis	climate change / resiliency planning (e.g., extreme weather, temperature, salt water intrusion into ground water, storm intensity, wildfire)	ability to be impartial	field notes and photography
D.03	Interpret and Review Soils and Geology (e.g., geotechnical, geology, soil map, soil characteristics)	contaminated sites (e.g., brownfields and landfills)	ability to identify site opportunities and constraints	government databases (e.g., EPA, EJ, FEMA, flood maps, national wetlands inventory)
D.04	Perform Topographical Analysis (e.g., slope analysis)	crime prevention (CPTED) (e.g., lighting and site lines, vegetation management)	ability to interpret and evaluate and critical information	site inventory
D.05	Identify Physical Opportunities and Constraints	ecology (e.g., native, local environments, natural systems)	ability to interpret geotechnical reports	software (e.g., GIS, CAD, BIM, photogrammetry, Google Earth, Recap, databases)
D.06	Perform Utility Analysis (e.g., capacity, availability, proximity, suitability)	environmental conditions (e.g., solar aspect, wind, soil types, erosion, noise, smell, photometrics, glint/glare, albedo, permeability)	ability to interpret surveys and aerial photography	subconsultants (e.g., arborists, engineers, archaeologist, land surveyor, wetlands evaluator)
D.07	Analyze Existing Environmental Variables (e.g., contamination, erosion, air quality, water quality, micro-climate)	existing hazards	ability to perform a gap analysis (e.g., field verification, as-built ground truthing)	
D.08	Perform Circulation Analysis (e.g., multi-modal, non-motorized, access, connectivity)	flora and fauna (e.g., plant hardiness zones, wildlife patterns, wildlife habitat, fuel loading/models, invasive species, plant identification, endangered/threatened species, pests and diseases)	ability to perform and correlate analyses at a micro and macro level	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
D.09	Perform Visual Resource Analysis (e.g., view sheds, view corridors, aesthetics)	geography	ability to utilize data sources to drive decisions	
D.10	Perform Hydrological Analysis (e.g., floodplain, site drainage, water shed, surface, sub-surface)	geotechnical reports (e.g., water table, soil bearing capacity, depth to water table, subsurface constraints, soil contamination)	analytical thinking skills	
D.11	Perform Ecological Analysis (e.g., habitat, biodiversity, ecosystems)	hydrology and hydraulics (e.g., floodways, flood plains, aquifers, drainage, sediment control)	collaboration	
		impacts to the archeological, cultural, and historical resources and context	communication skills (e.g., data collection, dissemination of data, client-facing, oral, graphic, presentation)	
		inclusive design (e.g., accessibility requirements, universal design)	critical thinking	
		irrigation (e.g., waterflow, source, supply, pressure)	data management skills (e.g., cataloging, information management, organization, file management)	
		property-related constraints (e.g., easements, setbacks, utilities)	strategic thinking	
		regional context (e.g., adjacent land use, connectivity)		
		site survey and as-builts (e.g., boundary surveys, survey types, benchmarking, easements)		
		soils (e.g., composition, types, pH level, contaminants, texture)		
		topography and slopes		
		utility systems and infrastructure (e.g., overhead and underground easements and right-of-way, public and private)		
				3

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
E	Contextual Analysis			
E.01	Anticipate Impacts of Future Developments	accessibility requirements (e.g., universal design)	ability to assess existing conditions	baseline studies and reports
E.02	Identify Contextual Constraints and Opportunities	archeological, cultural, and historical resources and context	ability to be impartial	field notes and photography
E.03	Confirm Appropriate Use	circulation patterns and volume (e.g., parking ratios, traffic calming measures, roadway width and signalization, accident reports)	ability to identify site opportunities and constraints	government databases (e.g., EPA, EJ, census data, American Community Survey, crime reports, traffic reports)
E.04	Conduct Code Compliance Review	climate change / resiliency planning (e.g., extreme weather, temperature, salt water intrusion into ground water, storm intensity, wildfire)	ability to interpret and evaluate and critical information	results of public engagement process (e.g., community stories, social risk, significant landmarks, cultural attachment)
		codes, ordinances, and regulations	ability to perform and correlate analyses at a micro and macro level	subconsultants (e.g., planners, community engagement, economists, real estate, conservationists, community/cultural champions, risk analysts)
		contaminated sites (e.g., institutional controls, land use controls)	ability to utilize data sources to drive decisions	
		crime prevention (CPTED) (e.g., crime reports and trends)	analytical thinking skills	
		cultural landscape and heritage areas	collaboration	
		demographics (e.g., mobility, accessibility, DEI, age, culture, socioeconomic, race, density, population, community patterns)	communication skills (e.g., data collection, dissemination of data, client-facing, oral, graphic, presentation)	
		ecology (e.g., native, local environments, natural systems)	critical thinking (e.g., data validation)	
		economic sustainability	data management skills (e.g., cataloging, information management, organization, file management)	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		environmental and social equity	data mining skills	
		existing feasibility studies	empathetic	
		existing reports and studies	strategic thinking	
		interactions and correlations with adjacent land uses (e.g., light pollution, noise pollution)		
		previous community planning		
		property-related constraints (e.g., entitlements, deed restrictions, covenants)		
		regional context (e.g., adjacent land use, zoning, future land use, connectivity)		
		site survey and as-builts (e.g., planned development documents (PD), entitlements)		
		social sustainability and equity		
		visual resource assessment methods		
F	Stewardship and Design Principles			
F.01	Plan for Sustainability	baseline and future trends	ability to balance competing priorities	certification templates
F.02	Plan for Climate Resiliency	certification types and levels related to sustainability (e.g., LEED, SITES)	ability to define project goals and objectives	climate modeling software
F.03	Plan for Environmental and Social Equity	construction methods and cost	ability to educate clients on the environmental impacts of design	GIS database
F.04	Recognize Historical and Cultural Significance	cultural landscape and heritage areas	ability to interpret data and apply data to the design process	hydrology and hydraulics modeling
		environmental and social equity (e.g., where disenfranchised communities are located, direct and indirect environmental impacts)	climate modeling skills	local and national registries and archives
		ethnology (e.g., stories and cultural traditions)	communication skills	market and census data

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		historical and cultural significance of a site	graphics skills	stakeholder engagement results
		historical natural hazard events	interviewing skills	
		material sourcing (e.g., location, specification, renewable, plant origin, plant provenance)	research skills	
		principles of sustainability and best practices (e.g., LID, green infrastructure, xeriscaping, life cycle costing, benefit cost analysis, repetitive loss reduction, hazard mitigation)	strategic communication (e.g., tactfulness, storytelling skills)	
		professional and environmental ethics		
		research methodology (e.g., primary source research, authentication of information)		
		site and landscape (environmental) performance benefits and services		
		post-construction evaluation monitoring		
		alternative energy sources		
		conservation strategies (e.g., soil, forest, water)		
G	Master Planning			
G.01	Formulate Planning Goals (e.g., vision)	budgeting and funding mechanisms (e.g., public and private partnerships, tax incentivizing, community revitalization levy, government funding, grants)	ability to design and evaluate plan alternatives	charette tools
G.02	Prepare Project Program (inclluding budget)	codes, ordinances, and regulations (e.g., zoning, land use, form-based codes, historic/district overlays)	ability to incorporate feedback into design	design software

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
G.03	Synthesize Site Analysis	comprehensive plans (e.g., park system master plan, mobility plans, regional recreation plans, regional stormwater plans, economic development plans, urban forestry plans)	ability to interpret and apply spatial data	maps
G.04	Establish Opportunities and Constraints	environmental planning regulations (e.g., protected species, water rights, buffering)	ability to interpret and apply technical information	reference materials
G.05	Determine Appropriate Land Use	equity and gentrification concerns for a community	ability to interpret codes, ordinances, and regulations	visualization tools (e.g., 3D model, mapping tools, GIS)
G.06	Evaluate Planning Scenarios	existing conditions (e.g., existing topography, watersheds, forestry, wildlife, floodplains, hazards, utilities, infrastructure, demographics, natural systems, bioregions)	ability to obtain funding (grant writing and fundraising)	
G.07	Arrange Program Elements	feasibility studies (e.g., capital improvements budget)	ability to organize and write a report	
G.08	Produce Planning Documents (e.g., land use, parks, open space, regional, historic, site master, corridor, blueways, greenways)	geometrics (e.g., road alignment, radius, gradient, grade)	ability to work with teams	
G.09	Establish Design Guidelines	history of the community (e.g., community needs, previous community struggles, community heritage, program needs, growth patterns and trends)	code writing skills	
G.10	Develop Phasing Plan	history of the site (e.g., previous master plans, development patterns, ecological systems, contamination, crime data)	collaboration skills	
G.11	Communicate Planning Outcomes	implementation plans (e.g., phasing, cost estimates, opinion of probable cost, prioritization)	context sensitive design skills	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		land use patterns (e.g., adjacencies, connections, transitions)	form giving, storytelling, and placemaking skills	
		planning process	roadway design skills	
		scale (e.g., spatial requirements)	transit-oriented design (TOD) skills	
		storytelling and placemaking (e.g., human factors influencing design, precedence)	verbal, written, and graphic communication skills (e.g., drawings, perspectives, sections, elevations, image board, maps)	
		sustainable best practices	visual and spatial awareness	
		transportation patterns and policies (e.g., multimodal, connectivity, roadway design, transit-oriented development, parking, complete streets, green streets)		
		who are the stakeholders for the site		
		visioning		
H	Schematic Design			
H.01	Develop Design Intent	accessibility requirements	ability to apply codes, ordinances, and regulations to the design	charette tools
H.02	Create the Basis for Design	basic mathematics (e.g., measurement conversions, calculating area and volume)	ability to apply the inventory and analysis	design software
H.03	Prepare Functional Diagrams (e.g., program)	best practices (e.g., green infrastructure, climate resiliency, accessibility, adaptive reuse, project typologies)	ability to articulate a vision	external inputs (stakeholder input, client input, municipality input)
H.04	Produce Conceptual Diagram (e.g., bubble)	codes, ordinances, and regulations	ability to articulate metrics for evaluation	maps
H.05	Develop Schematic Design Alternatives	compatible uses and adjacencies	ability to educate clients	reference materials

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
H.06	Evaluate Design Alternatives	conceptual grading	ability to obtain client input	site inventory and analysis outcome
H.07	Refine Selected Alternatives	construction feasibility (e.g., budgets, schedule, staging, phasing)	ability to obtain stakeholder consensus	subconsultants and SMEs
H.08	Produce Graphics, Illustrations, and Diagrams	crime prevention through environmental design	ability to evaluate and prioritize competing interests for the good of the project	visualization tools (e.g., 3D model, mapping tools, GIS)
		design parameters (e.g., codes, permitting, certifications, submittal processes, critical path, sequencing)	ability to receive and process input (e.g., criticism, feedback, owner/client comments)	
		design principles (e.g., balance, color, proportions, sequence, unity, rhythm, scale, texture, line, form)	adaptability	
		design process	collaboration skills	
		design team roles and responsibilities	communication skills (e.g. client, agency, regulators, internal and external)	
		drafting and graphic standards (e.g., color theory, line hierarchy, line type, shading/hatches, font size, font legibility, font type, legends, scales)	conflict resolution skills	
		form giving and space making (e.g. design aesthetic)	critical thinking skills (e.g., ability to visualize how a design will perform)	
		image boards (e.g. plant materials, hardscapes, signage, water features, site amenities, lighting)	cultural and environmental sensitivity	
		inventory and analysis	foresight (e.g., ability to understand if elements of the design are not feasible)	
		limitations of practice or team	graphic communication skills (e.g., hand graphics, computer graphics, visual simulations)	
		opportunities and constraints	management skills	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		precedence and vetting	negotiation skills	
		program development	organization skills	
		project scope (e.g., program and client needs)	patience	
		project site and project limits	presentation skills	
		site conditions (e.g., site circulation, drainage, topography, utilities, access, microclimate, watershed)	time management skills	
		planting design (e.g., principles, function, form, screening, buffering)		
I	Design Development			
I.01	Refine Design Elements (e.g., material, circulation, lighting, utilities, planting)	accessibility requirements	ability to apply codes, ordinances, and regulations to the design	cost estimating tools
I.02	Determine Maintenance Implications	best practices (e.g., green infrastructure, climate resiliency, accessibility, adaptive reuse, project typologies)	ability to apply the inventory and analysis	cut sheets and samples
I.03	Collaborate on the Design of Irrigation Systems (e.g., water conservation, sustainability, low water, gray water)	codes, ordinances, and regulations	ability to articulate a vision	design software
I.04	Identify Required Approvals (e.g., regulatory permitting)	construction feasibility (e.g., budgets, schedule, staging, phasing)	ability to articulate metrics for evaluation	external inputs (stakeholder input, client input, municipality input)
I.05	Develop Opinion of Probable Costs (e.g., schematic, design development, revisions)	crime prevention through environmental design	ability to educate clients	manufacturers' specifications
I.06	Evaluate Value Engineering Alternatives	design parameters (e.g., codes, permitting, certifications, submittal processes, critical path, sequencing)	ability to evaluate and prioritize competing interests for the good of the project	maps

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
I.07	Demonstrate Understanding of Legal Liabilities	design principles (e.g., balance, color, proportions, sequence, unity, rhythm, scale, texture, line, form)	ability to obtain client input	reference materials
		design process	ability to obtain stakeholder consensus	site inventory and analysis outcomes
		design team roles and responsibilities	ability to receive and process input (e.g., criticism, feedback, owner/client comments)	subconsultants and SMEs (e.g., manufacturers' representatives)
		drafting and graphic standards (e.g., color theory, line hierarchy, line type, shading/hatches, font size, font legibility, font type, legends, scales)	adaptability	vignette tools
		form giving and space making (e.g. design aesthetic)	collaboration skills	visualization tools (e.g., 3D model, mapping tools, GIS)
		grading (e.g., cut and fill quantities, grading progression)	communication skills (e.g. client, agency, regulators, internal and external)	
		integrated design and performance	conflict resolution skills	
		inventory and analysis	critical thinking skills (e.g., ability to visualize how a design will perform)	
		limitations of practice or team	cultural and environmental sensitivity	
		maintenance implications (e.g., project lifecycle, budget, who is maintaining, client maintenance budget expectations, maintenance tools and equipment, maintenance techniques)	foresight (e.g., ability to understand if elements of the design are not feasible)	
		material pallets (e.g. plant materials, hardscapes, signage, water features, site amenities, lighting, sourcing, cut sheets, durability, lead time, availability, cost)	graphic communication skills (e.g., hand graphics, computer graphics, visual simulations)	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		mathematics (e.g., measurement conversions, calculating area and volume, geometry)	management skills	
		operational considerations (e.g., security, technology, site users, site user experience, site access, hours of operation, site programming, irrigation, lighting, vegetation management)	negotiation skills	
		opinion of probably costs	organization skills	
		opportunities and constraints	patience	
		precedence and vetting	time management skills	
		program refinement		
		project scope (e.g., program, client needs, client standards and uniformity)		
		site conditions (e.g., site circulation, drainage, topography, utilities, access, microclimate)		
		stormwater management		
		planting design (e.g., right plant, right place)		
J	Stormwater Management			
J.01	Determine Watershed Area	low impact design principles	ability to read and interpret grading	maps
J.02	Calculate Stormwater Management Systems	types of stormwater management facilitates and infrastructure (e.g., detention basins, retention basins, catch basins)	ability to read and interpret a geotechnical report	pipe maps
J.03	Calculate Pervious and Impervious Areas	goals and objectives of stormwater management interventions (e.g., quantity of retained water, quality of water, discharge)	ability to calculate water volumes	design software (e.g., CAD, BIM, SWMM)

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
J.04	Develop Sustainable Water Quality Practices	soil types and permeability	mathematics skills (e.g., runoff coefficient, rational method)	analysis software (e.g., GIS)
J.05	Select Surface and Sub-Surface BMPs	codes, ordinances, and regulations (e.g., related to water)	ability to read and interpret maps	subconsultants and SMEs
J.06	Select Building-Systems BMPs (e.g., Green Roofs, Blue Roofs, Brown Roofs, Green Walls, Water Harvesting/Cisterns, Gray Water)	project budget	stormwater management modeling skills	reports for permitting
J.07	Develop Erosion and Sedimentation Control Plan	types of vegetation (e.g., runoff coefficient, phytoremediation)	ability to collaborate with other professionals (e.g., civil engineers, watershed managers)	hydrology and hydraulics modeling
J.08	Obtain Approvals and Permits	storage considerations and options (e.g., dry pond, wet pond, detention basin, retention basin, sump/detention vaults)		test kits (e.g., infiltration, water sampling, soil sampling)
		conveyance considerations and options (e.g., pipe sizes, sheet flow, flow rates, weir, bioswale, discharge, French drain)		groundwater monitoring
		water harvesting		infiltrometer
		building systems		storm intensity models
		water authorities (e.g., SWPPP, water permitting, water rights, combined storm/sewer overflow)		
		point-source vs non point-source water discharge		
		water velocity and energy disbursement		
		existing groundwater impacts		
		institutional controls for stormwater quality (first flush)		
		ecology (e.g., riparian zones, salt tolerance)		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		stormwater management maintenance expectations and requirements		
		average annual rainfall and intensity		
K	Grading and Earthwork			
K.01	Adhere to Accessibility Standards	accessibility standards (e.g., allowable slopes, turning radii, rail placement)	ability to interpolate spot elevations from contours, and vice versa	accessibility standards
K.02	Produce Detailed Grading Plan	angle of repose	ability to read and interpret site surveys (e.g., benchmarking, spot elevations)	cut and fill calculation tools (e.g., Civil 3D, ArcGIS)
K.03	Produce Large-Scale Grading Plan	differential settlement (e.g., doweling, expansion joints, control joints, recommended compaction rates)	ability to read and interpret topographical maps	geotechnical reports (e.g., boring logs, depth to groundwater, moisture content)
K.04	Review Grading Plans	drafting standards (e.g., line types, labeling, label location, contour intervals, high points-low points, crowns, swales, berms, ridgelines)	ability to read geotechnical reports	ground penetrating radar (e.g., utilities, tree roots, coffins)
		existing and proposed water flow patterns	ability to visualize 3D concepts from a 2D map	product cut sheets
		existing site conditions (e.g., topography, slope, soils, watersheds, vegetation, wetlands, depth to bedrock, frostlines, location and depth of underground utilities, site survey)	mathematics skills	scale
		hardscape materials	visual and spatial awareness	site survey (e.g., potholing)
		hardscapes (e.g., ramps, stairs, sidewalks, parking lots, walls, plaza, lateral surcharge)		soil samples (e.g., profile, composition, characteristics, textures, types)
		interpolate spot elevations		standard details
		landform grading (e.g., sports fields, parks, trails, basins, berms, sledding hills, swales)		surface modeling (e.g. TIN, DEM, GIS)

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		limit of disturbance and adjacencies		topography maps (e.g., USGS, Provincial Base Maps)
		plan and profile (e.g., stationing, roadway horizontal and vertical alignment)		
		positive drainage away from buildings		
		site preparation (e.g., load bearing capacity, soil conditioning, structural/engineered fill)		
		slope stabilization methods (e.g., gabion, riprap, retaining wall, waddles, tiebacks)		
		soil characteristics (e.g., expansion, compaction, shrinkage, contraction, over excavation)		
		tolerances		
L	Drainage Systems			
L.01	Review Drainage Plans	biological hazards (e.g., mosquitos, wildlife)	ability to coordinate with other disciplines	capacity data
L.02	Prepare Drainage Plan and Profile	confined safety standards (e.g. manholes, culverts, drainage structure, vaults, subsurface storage)	calculation skills	cut sheet data
L.03	Design and Select Drainage Components	culvert design (e.g., safety, aesthetic, confined space safety standards)	creativity	drafting software (e.g., CAD, BIM)
		daylighting (e.g. splashpad outflow, energy dispersion, security and access)	graphic communication skills	modeling software
		drainage basins (e.g., pipe sizing, inlets, outlets)	hydraulic modeling skills	site survey
		hydrology and hydraulics (e.g., vertical and horizontal alignment, cover, minimum and maximum slope, angle types, clean-outs)	mathematical skills	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		invert elevations and outflow structures	problem solving skills	
		LID		
		maintenance considerations (e.g. clean-outs, manholes)		
		ordinances, codes, and regulations		
		pavement types (e.g. pavers, asphalt, concrete)		
		permeability and impermeability of materials		
		pipes (e.g., concrete, PVC, perforated, corrugated, load rating)		
		structure design (e.g., premanufactured vs site-specific, tie-ins)		
		subsurface network types (e.g. inline, manifold)		
		surcharge prevention		
		system assessment		
		types and characteristics of grates (e.g. plastic, metal, atrium, honeycomb, composite, load rating)		
		types of inlets (e.g. cleanouts, catch basins, drain inlets, weirs, French drains, slot drains, area inlets, security and access)		
		water intrusion prevention (e.g. water proof barrier, French drains, foundation drains, berms and swales, sump-pumps)		
		water movement (e.g., migration)		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
M	Construction Plans and Details			
M.01	Identify Required Plan Sheets	annotation and referencing (e.g., north arrows, scale, contour labels, clarity, interdisciplinary cross referencing)	ability to communicate the design intent in a construction drawing set	AIA style guide
M.02	Produce Existing Conditions and Demolition Plan	appropriate detail type (e.g., scaling, detail views, plans, sections, elevations, isometric)	ability to identify the appropriate level of detail for a drawing set	construction specifications
M.03	Produce Protection and Mitigation Plan	building protection and security (e.g., lighting, fencing, bollards)	ability to manage workflow	cut sheets
M.04	Produce Layout and Materials Plan (e.g., site furnishings)	chemical reaction (e.g., galvanic reaction, cathodic protection)	ability to write good detail notes	geotechnical report
M.05	Produce Planting Plans and Details	codes, ordinances, and regulations (e.g., submittal requirements, stormwater calculations, photometrics, tree recompense/mitigation)	attention to detail	industry standards (e.g., time savers, graphic standards)
M.06	Create Details, Elevations, Profiles, and Sections (e.g., walls, pavements, structures, specialty features, green roofs, drainage details)	connection types (e.g., doweling, fasteners)	awareness of interdisciplinary elements and their overlaps and gaps (e.g., functionality)	precedence documents (e.g., similar drawings, similar projects, as-builts)
M.07	Collaborate on Supplemental Plans (e.g., lighting, irrigation, playground, wayfinding)	construction acronyms and vocabulary	coordination skills	site survey or survey drawings
M.08	Develop General Notes, Schedules, and Legends	construction process and delivery methods	drafting skills	software (e.g., BIM, CAD, plotter, project management)
M.09	Comply with Code Requirements and Dimensional Standards	construction sequence, means, and methods	project management skills	standard details
M.10	Perform QA/QC Activities	CPTED	QA/QC skills	standard details and notes
		detail notes		testing standards (e.g., ASTM, ISO, CSA, ACI, AASHTO)

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		dimensioning and labeling (e.g., stationing, northing and easting, meets and bounds)		title blocks
		fall protection (e.g., playgrounds, rails, elevator platforms, recovery shelves, stairs)		vendor representatives
		general notes vs keyed notes		
		graphic clarity standards (e.g., line hierarchy, line types, contrast, shading, hatching)		
		how details and sections are annotated and referenced		
		how to organize a construction document set in a logical progression (e.g., plans, sections, elevations, enlargements, details, schedules)		
		interdisciplinary coordination and communication (e.g., correlation of interdisciplinary work, design conflict resolution)		
		interdisciplinary practice (e.g., irrigation, lighting, architecture, civil, structural)		
		irrigation		
		joint types (e.g., expansion, control, isolation, doweling, cold, key)		
		materials (e.g., steel, concrete, asphalt, pavement types, wood, glass)		
		plant materials (e.g., ecology, plant communities, plant characteristics, zoning of plant types, availability, irrigation)		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		planting details (e.g., trees, ground covers, climbers, vines, ornamental grasses, shrubs)		
		pool protection and security		
		project delivery methods (e.g., design-build, design-bid-build, negotiated bid, CMAR)		
		rail design (e.g., guard rails, hand rails)		
		retaining walls (e.g., types, limitations of practice, legal liability)		
		scale		
		sheet composition		
		site furnishing (e.g., benches, trash cans, water fountains, rails, flag poles)		
		soil composition (e.g., amended, bioretention, light weight, structural soils)		
		structures (e.g., decks, pergolas, fences, stairs, pavements, walls, pavilions, curbs, trellis)		
		sub-terranean structures (e.g., vaults, tree cells, conduit, storage)		
		surveying (e.g., benchmarking)		
		universal and inclusive design (e.g., path of travel, signage, tolerances, stairs, ramps, slopes)		
		vegetation management (e.g., tree protection)		
		water filtration (e.g., legionnaires)		
		what goes in plans vs. what goes in specs (e.g., "rule of one")		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
N	Construction Specifications			
N.01	Develop Project Manual and Front-End Specifications	addenda process (e.g., revisions, exclusions, supplemental information, omissions, responses to RFI)	ability to coordinate between drawings and specifications	bid documents
N.02	Establish Submittal Requirements	approvals (e.g., samples, submittals, shop drawings, mock-ups)	ability to coordinate between specifications (e.g., eliminate circular referencing)	bid tab
N.03	Write Technical Specifications	bid alternates	ability to cross-reference specifications and bid forms	certification types (e.g., LEED, SITES, WELL)
N.04	Facilitate Bid Process (e.g., bid forms, meetings, delivery process)	bid forms (e.g., lump sum, unit cost, NTE)	ability to integrate different agency or institutional specifications	codes and standards (e.g., NEC, ASTM, NFPA, ISO, IBC, OSHA)
N.05	Respond to Bidders' Questions and Prepare Addenda	bid qualifications	ability to organize project manual (e.g., geotechnical, cut sheets, supplemental)	insurance provider
		bid type (e.g., direct award, competitive bid, weighted bid)	ability to use clear and concise language	MasterSpec
		chain of command (communication process)	diplomacy	software (e.g., spreadsheet, word processing, bid evaluation)
		codes, ordinances, and regulations	ethical	specification resources (e.g., office standard, DOT, campus, other agency, green book, DPW, Federal UFCs)
		construction cost and value	impartial	style guides (e.g., AIA, EJCDC)
		construction drawing set	mathematical skills	virtual or physical plan room
		construction law	methodical	
		contract law	negotiation skills (e.g., value engineering process, schedule)	
		ethics and integrity of bid process (e.g., how to respond to questions, universal release of information, how to respond to errors and omissions)	organization skills	
		evaluation criteria (e.g., social equity, lowest qualified bid)	record keeping skills	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		format and structure	spreadsheet software skills	
		front end specifications	written and verbal communication skills	
		how to coordinate with allied professions		
		impartiality		
		insurance and bonding		
		master service agreements		
		material and construction testing		
		prequalification of bidders		
		process of specification building (from outline to complete specifications)		
		project delivery method as it relates to the bid process (e.g., progressive design-build, design-build, bid build)		
		project scope and applicable specifications		
		public advertisement methods (e.g., online, federal register, newspaper)		
		public vs private bidding process (e.g., advertisement of bid, pre-bid meetings, bid openings, critical path, award, schedule)		
		specifications related to codes, ordinances, and regulations		
		standard language or tone of language within specifications (e.g., shall, will)		
		testing and performance standards (e.g., ASTM, ISO, CSA, ACI, compaction, slump, compression)		
		types of specifications (e.g., performance, proprietary, three-part)		

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
O	Construction Administration			
O.01	Conduct Pre-Construction Activities (e.g., walk-through, meeting)	accounting	attention to detail	codes and standards (e.g., OSHA, ISO)
O.02	Respond to RFIs	approvals (e.g., samples, submittals, shop drawings, mock-ups)	assertiveness	PPE
O.03	Manage Change Orders (e.g., bulletins, purchase requests, change directives)	change in scope, schedule, and additional services	leadership skills	drawings and specificiations
O.04	Review Submittals (e.g., shop drawings, materials submittal, product submittals, substitutions, mock-ups)	construction site hierarchy	conflict resolution	software
O.05	Conduct Site Observations	contruction process	communication skills	measurement tools (e.g. measuring tape, measuring wheel, electronic)
O.06	Prepare Field Reports	documentation process (e.g., supplemental instruction, RFI, field changes, change orders, field reports, change directives, pay applications)	diplomacy	camera and drone
O.07	Perform Project Close-Out (e.g., punch-list, substantial completion, guarantee period, final completion)	insurance and bonding	documentation skills (e.g. written and through photographs)	schedule
		legal liability	organization skills	safety plan
		liquidated damages	mathmatical skills	
		maintenance and warranty periods	critical thinking skills	
		pre-construction walk-throughs	observation skills	
		project close out (e.g. puch-list/deficiency list, warranty period, substantial completion, certificate occupancy, liens)	ethical	

	Task Inventory	Knowledge of	Skills, Abilities, and Attributes	Tools, Equipment, and Other Resources
		record keeping	ability to recognize conflicts and discrepencies between the drawings and construction	
		roles and responsibilities (e.g., observe vs direct, owners representative)	ability to compromise	
		safety practices	good judgement	
		scheduling (e.g. critical path, delays on impact of time and cost)	ability to prioritize	
		site logistics	patience	
		site visits (e.g. reviewing form work, reviewing mock-ups, plant placement, plant installation, grading review, deficiency review, storm water review)		
		specifications and drawings		
		traffic management and control		

Appendix D: Examination Blueprints

Section	Duty/Task	FINAL	FINAL Items
1.A	**Project Management**	**6.67%**	**6**
1.A.01	Develop and Manage Design Contracts		2
1.A.02	Select and Manage Design Team		2
1.A.03	Determine and Manage Design Scope, Schedule, and Budget		2
1.B	**Inventory and Data Collection**	**21.11%**	**19**
1.B.01	Collect Related Policy Documents (e.g., municipal planning documents, proposed and existing land use maps, FEMA, EPA, stormwater management policies)		2
1.B.02	Assimilate Information from Previous Planning Processes		2
1.B.03	Conduct Onsite Investigation and Fieldwork		2
1.B.04	Document Site Data		3
1.B.05	Identify Adjacent Land Use		3
1.B.06	Collect Contextual Data (e.g., natural systems, road networks, demographics, cultural and historical)		3
1.B.07	Research Codes, Ordinances, and Permitting Requirements (e.g., site/project specific requirements)		4
1.C	**Stakeholder Engagement Process**	**14.44%**	**13**
1.C.01	Identify Stakeholders		2
1.C.02	Coordinate with Governing Bodies		2
1.C.03	Support Public Participation Process (e.g., consult with clients, summarize feedback, communicate deliverables)		4
1.C.04	Evaluate Design Based on Feedback		3
1.C.05	Obtain Public and Private Approvals		2
1.D	**Physical Analysis**	**38.89%**	**35**
1.D.01	Determine Appropriate Types of Analyses		4
1.D.02	Perform Vegetation Analysis		3
1.D.03	Interpret and Review Soils and Geology (e.g., geotechnical, geology, soil map, soil characteristics)		3
1.D.04	Perform Topographical Analysis (e.g., slope analysis)		4
1.D.05	Identify Physical Opportunities and Constraints		4
1.D.06	Perform Utility Analysis (e.g., capacity, availability, proximity, suitability)		2
1.D.07	Analyze Existing Environmental Variables (e.g., contamination, erosion, air quality, water quality, *micro-climate*)		3
1.D.08	Perform Circulation Analysis (e.g., multi-modal, access, non-motorized, connectivity)		3
1.D.09	Perform Visual Resource Analysis (e.g., view sheds, view corridors, aesthetics)		2
1.D.10	Perform Hydrological Analysis (e.g., floodplain, site drainage, water shed, surface, sub-surface		4
1.D.11	Review Ecological Analysis (e.g., habitat, biodiversity, ecosystems)		3
1.E	**Contextual Analysis**	**18.89%**	**17**
1.E.01	Anticipate Impacts of Future Developments		4
1.E.02	Identify Contextual Constraints and Opportunities		5
1.E.03	Confirm Appropriate Use		5

Section	Duty/Task	FINAL	FINAL Items
1.E.04	Conduct Code Compliance Review		3
		100.00%	90
		90 Items + 10 Pretest	

Section	Duty/Task	FINAL	FINAL ITEMS
2.A	**Stewardship and Design Principles**	**16.47%**	**14**
2.A.01	Plan for Sustainability		4
2.A.02	Plan for Climate Resiliency		3
2.A.03	Plan for Environmental and Social Equity		4
2.A.04	Recognize Historical and Cultural Significance		3
2.B	**Master Planning****	**32.94%**	**28**
2.B.01	Formulate Planning Goals (e.g., vision)		2
2.B.02	Prepare Project Program (including budget)		2
2.B.03	Synthesize Site Analysis		3
2.B.04	Establish Opportunities and Constraints		2
2.B.05	Determine Appropriate Land Use		3
2.B.07	*Develop Master Plan (e.g., conceptual plans, planning high level program elements, drag and place, community, determine planning strategies)*		*3*
2.B.06	*Evaluate Planning Scenarios (e.g., evaluate scenario alternatives, multiple options that may not be fully developed)*		*3*
2.B.08	Produce Planning Documents (e.g., land use, parks, open space, regional, historic, site master, corridor, blueways, greenways)		4
2.B.09	Establish Design Guidelines		2
2.B.10	Develop Phasing Plan		2
2.B.11	Communicate Planning Outcomes		2
2.C	**Schematic Design**	**28.24%**	**24**
2.C.01	Develop Design Intent (e.g., what we're going to do, function)		2
2.C.02	Create the Basis for Design (e.g., how we're going to do it, narrative description, form)		3
2.C.03	Prepare Functional Diagram (e.g., program, not site-specific)		3
2.C.04	Produce Conceptual Diagram (e.g., bubble, site-specific)		3
2.C.05	Develop Schematic Designs (e.g., blank slate, placing elements on site, selecting design elements/attributes for a site/project)		4
2.C.06	Evaluate Design Alternatives (e.g., select between pre-defined or already designed options)		4
2.C.07	Refine Selected Alternatives (e.g., improving/updating an existing design)		3
2.C.08	Produce Graphics, Illustrations, and Diagrams		2
2.D	**Design Development**	**22.35%**	**19**
2.D.01	Refine Design Elements (e.g., material, circulation, lighting, utilities, planting)		6
2.D.02	Determine Maintenance Implications		2
2.D.03	Collaborate on the Design of Irrigation Systems (e.g., water conservation, sustainability, low water, gray water)		2
2.D.04	Identify Required Approvals (e.g., regulatory permitting)		2
2.D.05	Develop Opinion of Probable Costs (e.g., schematic, design development, revisions)		2
2.D.06	Evaluate Value Engineering Alternatives		2

Section	Duty/Task	FINAL	FINAL ITEMS
2.D.07	Demonstrate Understanding of Legal Liabilities		3
		100.00%	85
		85 Scored + 10 Pretest	

Section	Duty/Task	FINAL	FINAL Items
3.A	**Construction Plans and Details**	**50.00%**	**45**
3.A.01	Identify Required Plan Sheets		2
3.A.02	Produce Existing Conditions and Demolition Plan		3
3.A.03	Produce Protection and Mitigation Plan		2
3.A.04	Produce Layout and Materials Plan (e.g., site furnishings)		6
3.A.05	Produce Planting Plans and Details		4
3.A.06	Create Details, Elevations, and Sections (e.g., walls, pavements, structures, specialty features, green roofs, drainage details)		14
3.A.07	Collaborate on Supplemental Plans (e.g., lighting, irrigation, playground, wayfinding)		8
3.A.08	Develop General Notes, Schedules, and Legends		2
3.A.09	Comply with Code Requirements and Dimensional Standards		2
3.A.10	Perform QA/QC Activities		2
3.B	**Construction Specifications and Bidding**	**20.00%**	**18**
3.B.01	Develop Project Manual and Front-End Specifications		4
3.B.02	Establish Bid Requirements		2
3.B.03	Write Technical Specifications		6
3.B.04	Facilitate Bid Process (e.g., bid forms, meetings, delivery process)		4
3.B.05	Respond to Bidders' Questions and Prepare Addenda		2
3.C	**Construction Administration**	**30.00%**	**27**
3.C.01	Conduct Pre-Construction Activities (e.g., walk-through, meeting)		3
3.C.02	Respond to RFIs		2
3.C.03	Manage Construction Contract (e.g., budget items, change orders, bulletins, purchase requests, change directives)		5
3.C.04	Review Submittals (e.g., shop drawings, materials submittal, product submittals, substitutions, mock-ups)		5
3.C.05	Conduct Site Observations and Field Reports		5
3.C.07	Perform Project Close-Out (e.g., punch-list, substantial completion, guarantee period, final completion)		4
3.C.08	Perform Construction Project Management (e.g., roles and responsibilities, liabilities, scope, schedule, coordination with other disciplines, coordination with owner)		3
		100.00%	90
			90 Items + 10 Pretest

Section	Duty/Task	FINAL	FINAL Item
4.A	**Stormwater Management**	**38.57%**	**27**
4.A.01	Determine Watershed Area		3
4.A.02	Determine Stormwater Management System		4
4.A.03	Determine Pervious and Impervious Areas		2
4.A.04	Develop Sustainable Water Quality Practices		4
4.A.05	Select Surface and Sub-Surface BMPs		4
4.A.06	Select Building-Systems BMPs (e.g., Green Roofs, Blue Roofs, Brown Roofs, Green Walls, Water Harvesting/Cisterns, Gray Water)		4
4.A.07	Develop Erosion and Sedimentation Control Plan		4
4.A.08	Obtain Approvals and Permits		2
4.B	**Grading and Earthwork**	**44.29%**	**31**
4.B.01	Adhere to Accessibility Standards		4
4.B.03	Produce Large-Scale Grading Design (e.g., site, landforms, mass-grading, conceptual, preliminary)		9
4.B.02	Produce Detailed Grading Design (e.g., place spot elevations, roadway profile, sidewalk profile, plaza)		9
4.B.04	Review Grading Design (e.g., review grading alternatives, evaluate for inconsistencies)		9
4.C	**Drainage Systems**	**17.14%**	**12**
4.C.02	Prepare Drainage Plan and Profile (e.g., design/create a plan or profile)		4
4.C.03	Design and Select Drainage Components (e.g., types of drains, selecting the appropriate components)		4
4.C.01	Review Drainage Plans (e.g., evaluate existing design or design alternatives)		4
		100%	70
			70 Scored + 10 Pretest