

# California-Specific Professional Land Surveyor Examination Test Plan

Effective January 2025

## General Definition of California Professional Land Surveying Practices:

The practice of land surveying in the State of California consists of determining, establishing, reporting and mapping the positions, contours and/or geospatial configuration of points, physical features, property interests, boundary and/or property lines by applying the principles of surveying, mathematics, measurement and law to meet the distinctive requirements of the State of California to protect the health, safety and welfare of the public.

This area of practice is structured into six primary content areas:

- I. Business Practices and Project Management (10%)
- II. Research, Project Planning and Preparation (16%)
- III. Field Operations and Investigations (20%)
- IV. Analysis and Evaluation (26%)
- V. Mapping and Document Preparation (16%)
- VI. Professional Consulting (12%)

<b>BPELSG Professional Land Surveyor Examination Test Plan 2025</b>	<b>Percentage of Questions on the Exam</b>
<p><b>I. Business Practices and Project Management</b></p> <p><b>Professional Activities:</b></p> <ol style="list-style-type: none"> <li>1. Explain the practice and importance of land surveying to the public</li> <li>2. Prepare proposals and contracts (e.g., scope, schedule, budget, client needs, regulatory requirements)</li> <li>3. Offer or procure land surveying and incidental services</li> <li>4. Direct personnel for office and field tasks</li> <li>5. Coordinate projects with third parties (e.g., agencies, consultants, contractors)</li> <li>6. Identify project standards (e.g., mapping, accuracy requirements, legal requirements, methodology, quality assurance, agency standards, project specifications)</li> <li>7. Develop plan for project execution (e.g., mapping, accuracy requirements, methodology, quality assurance, client needs)</li> <li>8. Preserve survey monuments in accordance with State law</li> <li>9. Manage a land surveying business, organization or department (e.g., compliance with DIR and/or Project Labor Agreement (PLA) regulations, Organizational Record)</li> <li>10. Apply the Subdivision Map Act and other related laws and regulations</li> <li>11. Apply the Professional Land Surveyors Act</li> <li>12. Identify and disclose potential conflicts of interest (e.g., risk, liability, protection)</li> </ol>	<b>10%</b>
<b>Test questions on these professional activities may include one or more of the following:</b>	
A. Professional Land Surveyors' (PLS) Act	
B. Project requirements	
C. Impact of local ordinances	
D. Subdivision Map Act (SMA)	
E. Survey-relevant sections of State laws (e.g., Public Resources Code, Civil Code, Evidence Code, Department of Industrial Relations (DIR) requirements)	
F. Impact of federal laws (e.g., FEMA, US Army Corps of Engineers, BLM)	
G. Laws and ordinances pertaining to setting of monuments (e.g., PLS Act § 8771-8772, SMA § 66495-66498, local ordinances)	
H. Right of entry laws	
I. Capabilities and limitations of equipment and technologies (e.g., GPS, laser scanning, levels, total stations, UAV)	
J. Interpretation of elements in construction plans and specifications pertaining to staking	
K. Procedures for preparation for aerial mapping (e.g. photogrammetric, LiDAR, UAV, flight plans, ground control)	
L. Procedures for preparation for terrestrial mapping (e.g., total station, GPS, LiDAR, cameras)	
M. When records of survey are required	
N. When corner records are required	
O. When tentative, parcel and final maps are required	
P. Map waivers (e.g., SMA § 66428)	
Q. Exceptions to Subdivision Map Act (e.g., SMA § 66412)	

R. State and local agency requirements for maps and related documents (e.g., submittal, review, filing)	
S. Project-specific mapping requirements and criteria	
T. Contractual agreements (e.g., cost estimates, scope of services, limitations)	
U. Appropriate communication methods (e.g., statutory, regulatory)	
V. Scope management (e.g. managing scope-creep, change order processes)	
<b>II. Research, Project Planning and Preparation</b>	<b>16%</b>
<b>Professional Activities:</b>	
<b>1. Determine proper control datums, realizations and epochs</b>	
<b>2. Analyze project data (e.g., recorded maps, deeds, title data, control data, land planning requirements)</b>	
<b>3. Identify conflicts within documents, maps and drawings</b>	
<b>4. Conduct project research</b>	
<b>5. Prepare and review construction calculations (e.g., staking plats, layout, exhibits)</b>	
<b>6. Perform surveying calculations (e.g., boundary, control, topographic)</b>	
<b>7. Plan control networks</b>	
<b>8. Plan field safety operations</b>	
<b>Test questions on these professional activities may include one or more of the following:</b>	
A. Interpretation of elements in construction plans and specifications pertaining to staking	
B. Procedures and requirements for aerial mapping (e.g., photogrammetric, LiDAR, UAV, control, flight plan)	
C. Procedures for preparation for terrestrial mapping (e.g., total station, GPS, LiDAR, photogrammetry)	
D. When records of survey are required	
E. When corner records are required	
F. Public Land Survey System (PLSS)	
G. Sequential conveyances (e.g., senior junior rights)	
H. Simultaneous conveyances (e.g., lot and block)	
I. Water boundaries	
J. Relationship of land grants between private, state and federal (e.g., ranchos, townsites)	
K. Methods of establishing boundaries	
L. Types and components of title documents (e.g., title report, chain of title, lot and block report)	
M. Monument recovery procedures (e.g., field package preparation, search points, magnetic vs. non-ferrous, historic depth)	
N. Easements, rights-of-way, leases and other encumbrances	
O. Methods and procedures for retracement and re-establishment of railroad rights-of-way	
P. Controlling elements of legal descriptions	
Q. Strengths and weaknesses of various legal description types	
R. Horizontal and vertical control	
S. Projections, datums, epoch dates, and transformations	
T. Geoid, ellipsoid and orthometric heights	
U. Error sources (e.g., multipath, data input, instrument calibration)	
V. Methods and procedures to produce control networks within accuracy standards (e.g., Public Resources Code, Federal and State standards)	

W. Sources of research data (e.g., public, quasi-public, private)	
X. Source, type and accuracy of digital data (e.g., metadata, GIS)	
Y. Earth movements (e.g., earthquakes, landslides, subsidence, plate tectonics)	
Z. Safety and hazard evaluations (e.g., CalOSHA, Manual on Uniform Traffic Control Devices)	
<b>III. Field Operations and Investigations</b>	<b>20%</b>
<b>Professional Activities:</b>	
<b>1. Perform topographic and/or as-built surveys</b>	
<b>2. Perform control surveys</b>	
<b>3. Perform boundary survey</b>	
<b>4. Retrace PLSS surveys</b>	
<b>5. Perform monitoring surveys</b>	
<b>6. Perform construction staking</b>	
<b>7. Perform hydrographic surveys (e.g., bathymetric, tidal datum)</b>	
<b>8. Communicate with clients, contractors and general public while in the field</b>	
<b>9. Notify right of entry</b>	
<b>10. Execute safety protocols and procedures</b>	
<b>11. Perform diligent monument search (e.g., monument preservation, boundary survey, legal requirements)</b>	
<b>12. Identify limitations of technologies for use in survey practice</b>	
<b>Test questions on these professional activities may include one or more of the following:</b>	
A. Right of entry laws	
B. Capabilities and limitations of equipment and technologies (e.g., GPS, laser scanning, levels, total stations, UAS)	
C. Interpretation of elements in construction plans and specifications pertaining to staking	
D. Public Land Survey System (PLSS)	
E. Monument recovery (e.g., boundary, control and/or topographic surveys)	
F. Monument re-establishment procedures (e.g., PLS Act 8771 and 8773)	
G. Correct monument identification	
H. Monument pedigree	
I. Horizontal and vertical control	
J. Error sources (e.g., multipath, data input, instrument calibration)	
K. California Coordinate Systems	
L. Real-time-networks (e.g., processes, redundancy, accessibility, accuracy)	
M. Field notes and staking reports	
N. Basis of control values and their relation to maps and construction plans (e.g., basis of bearings, benchmark)	
O. Methods and requirements for performing topographic, aerial, as-built, and/or bathymetric surveys,	
P. Field practices and procedures for construction staking	
Q. Geoid models, ellipsoid heights and orthometric heights	
R. Safety and hazard evaluations (e.g., CalOSHA, Manual on Uniform Traffic Control Devices)	
S. Physical evidence that may indicate unwritten rights (e.g., adverse possession, prescriptive rights)	
T. Physical evidence of water boundaries	

## IV. Analysis and Evaluation

26%

### Professional Activities:

1. Analyze field evidence together with recorded and unrecorded documentation to retrace boundaries, easements, and possible encroachments (e.g., monuments, occupation, oaths/parol evidence, project documents)
2. Evaluate accuracies and precisions of historic documents and maps versus measured survey data
3. Evaluate relevance and spatial relationships of maps and measured survey data (e.g., GIS data, field data, metadata)
4. Assess boundary location conflicts
5. Assess title conflicts
6. Analyze results of survey adjustments (e.g., least squares, error analysis)
7. Perform quality assurance and quality control
8. Reconcile deed descriptions with field evidence
9. Identify limitations of technologies for use in survey practice

### **Test questions on these professional activities may include one or more of the following:**

- A. When records of survey are required
- B. When corner records are required
- C. Public Land Survey System (PLSS)
- D. Water boundaries (e.g., tidal datums, navigable vs non-navigable)
- E. Hierarchy of evidence (e.g., Code of Civil Procedure 2077)
- F. Boundary resolution of simultaneous conveyances
- G. Boundary resolution of sequential conveyances
- H. Boundary resolution of junior senior rights
- I. Boundary resolution of deed descriptions
- J. Evaluation of field evidence
- K. Types of conveyances and their effects of ownership on property (e.g., fee vs. easement, grant deed, quitclaim deed, intent)
- L. Cloud on title
- M. Effect of earth movement on boundaries (e.g., earthquakes, landslide, subsidence, continental drift)
- N. Easements, rights-of-way, leases and other encumbrances
- O. Criteria for acceptance or rejection of monuments
- P. Physical evidence that may indicate unwritten rights (e.g., adverse possession, prescriptive rights)
- Q. Controlling elements of legal descriptions
- R. Types of legal descriptions (e.g., strip, metes and bounds, lot and block, aliquot)
- S. Exceptions and reservations of legal descriptions
- T. Horizontal and vertical control
- U. Projections, datums, realizations and epoch dates
- V. Geoid, ellipsoid and orthometric heights
- W. Conversion between grid and ground distances
- X. Errors - Analysis and quantification (e.g., data bias, error ellipses, residuals)
- Y. Digital terrain models
- Z. Point clouds (e.g., As-Built, reduction, management, analysis, extraction, terrain classification systems)

AA. Applications of relevant case law (e.g., boundary issues, liability)	
BB. Methods to obtain bearings or azimuths related to geodetic, magnetic, grid or astronomic north	
CC. Parol evidence	
DD. Use and interpretation of significant figures for maps, plats or reports	
EE. Survey-relevant sections of state laws (e.g., Public Resources Code, Civil Code, Evidence Code)	
FF. Historical accuracies vs. current precision (e.g., measuring by chaining, EDM, GPS)	
<b>V. Mapping and Document Preparation</b>	<b>16%</b>
<b>Professional Activities:</b>	
<b>1. Prepare legal descriptions (e.g., easements, lot line adjustments, other interests in real property)</b>	
<b>2. Ensure survey documents comply with State laws, project requirements, and contractual obligations</b>	
<b>3. Prepare and analyze 3D Models (e.g., BIM, DTM, point clouds)</b>	
<b>4. Prepare topographic maps from various sources (e.g., photogrammetry, field survey, LiDAR, GIS, UAS, hydrographic)</b>	
<b>5. Prepare control maps or reports (e.g., local, geodetic, monitoring)</b>	
<b>6. Prepare maps, plats and exhibits (e.g., court, easement, ALTA/NSPS, boundary)</b>	
<b>7. Prepare State regulated maps, plats, exhibits (e.g., records of survey, corner records, lot line adjustments, subdivision maps, condominium plans, LAFCO)</b>	
<b>8. Prepare construction reports (e.g., cut-sheets, plots, verification reports, quality assurance, ADA reports, form/pad certifications)</b>	
<b>Test questions on these professional activities may include one or more of the following:</b>	
A. Professional Land Surveyors' (PLS) Act	
B. Subdivision Map Act (SMA)	
C. ALTA/NSPS Land Title Survey related to State law	
D. Basis of control elements and their relation to maps (e.g., basis of bearings, benchmark)	
E. Strip legal descriptions	
F. Metes and bounds legal descriptions	
G. Aliquot part legal descriptions	
H. Portions and parts legal descriptions	
I. Exceptions and reservations in legal descriptions	
J. Projections, datums and epoch dates	
K. California Coordinate System	
L. Surveyor notes (e.g., boundary narrative)	
M. Surveyor reports (e.g., volume, staking)	
N. Digital terrain models	
O. Parol evidence (e.g., use, methods to document, and effects)	
P. Code of Regulations (Board Rules)	
Q. Public Resource Code (PRC)	
R. Signing and sealing requirements	
S. Components of a legal description (e.g., preamble, body)	
T. Methods and procedures for preparing topographic maps (e.g., photogrammetric, planimetric)	
U. Elements of corner records (legal content required)	
V. Elements of records of survey (legal content required)	
W. Elements of tentative maps (legal content required)	

X. Elements of parcel maps (legal content required)	
Y. Elements of final maps (legal content required)	
Z. Elements of certificates of compliance (legal content required)	
AA. Certificates of correction and amended maps	
BB. Depiction of physical evidence that may indicate unwritten rights	
CC. Easements, rights-of-way, leases and other encumbrances	
<b>VI. Professional Consulting</b>	<b>12%</b>
<b>Professional Activities:</b>	
<b>1. Communicate accuracies of maps or survey data (e.g., professionals, clients, staff)</b>	
<b>2. Provide expert witness testimony (e.g., depositions, arbitration, trials, litigation support)</b>	
<b>3. Provide land planning services (e.g., tentative maps, Department of Real Estate exhibits)</b>	
<b>4. Provide recommendations in accordance with State Laws (e.g., Subdivision Map Act, Professional Land Surveyors Act, Public Resources Code)</b>	
<b>5. Conduct independent peer review</b>	
<b>6. Provide conflict resolution</b>	
<b>7. Apply code of professional conduct</b>	
<b>8. Recognize risk awareness and general liability</b>	
<b>Test questions on these professional activities may include one or more of the following:</b>	
A. Professional Land Surveyors' (PLS) Act	
B. Subdivision Map Act (SMA)	
C. Impact of local ordinances (e.g., zoning, setbacks)	
D. State and local agency processing requirements for maps and related documents (e.g., submittal, review, filing)	
E. Appropriate communication methods (e.g., verbal and written)	
F. Effects of unwritten rights on boundaries	
G. Effects of riparian and littoral rights on boundaries	
H. Cloud on title	
I. Effects of earth movement on boundaries (e.g., earthquakes, subsidence, slides)	
J. Impacts of encumbrances (e.g., deeds of trust, tax liens, easements, leases)	
K. Evidence that may indicate unwritten rights (e.g., adverse possession, prescriptive rights)	
L. Effects of relevant case law (e.g., boundary issues, liability)	
M. Notice of potential encroachments	
N. Survey-relevant sections of state laws (e.g., Public Resources Code, Civil Code, Evidence Code, CEQA, Categorical Exemption, Negative Declaration)	
O. Surveyor's role in title and boundary conflicts (e.g., analysis, mediation, litigation support)	
P. Code of professional conduct (BR 476)	
Q. Mediation techniques	