School of Public Policy
UNIVERSITY OF CALIFORNIA, RIVERSIDE
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TO: Ken Barish, Chair
Riverside Division

FR: Kurt Schwabe, Chair
Executive Committee, School of Public Policy

RE: Proposed GIS and Public Policy Major

Date: February 26, 2026

The Executive Committee of the School of Public Policy is submitting on behalf of the School of Public Policy the following request for approval of a GIS and Public Policy Major.

Justification and Details are attached.

Name of the Proposed Major: Geographic Information Systems and Public Policy

Administrating Department: School of Public Policy (SPP)

Justification: GIS and Public Policy applies cutting-edge spatial analysis theories, concepts, and methods to the complexity of public policy analysis. Drawing on the expertise of the School of Public Policy faculty, the proposed major will equip students with the spatial reasoning and analytical skills necessary to address complex, real-world research questions and policy development challenges. From evaluating inequities in infrastructure provision, such as broadband or healthcare resources, to assessing risks and developing policies to mitigate the potential impacts of natural or technological hazards, spatial data analysis is integral to deepening our understanding of human, environmental, and policy landscapes.

GIS and Public combines courses in public policy woith courses in cartography and geovisualization, spatial analysis, GIS, human-centered spatial data science, remote sensing, and geospatial artificial intelligence (GeoAI), complementing foundational substantive and methodological coursework in the field of public policy. The major engages with contemporary scientific and policy challenges where a spatial perspective is vital to comprehensively understanding the causes of such challenges as well as designing, implementing, and evaluating practical efforts to address them.

Motivation for creating this major is to meet a substantial market demand for people trained in GIS techniques who have knowledge of public policy processes. Recent estimates (2023) suggest that direct value generated by geospatial analysis in the U.S. totals $185 billion, with indirect benefits ranging between $666 billion and $1.09 trillion. Projections indicate that by 2030, the direct value market will total $393 billion. Graduates of this program will be highly competitive for jobs in industry (e.g., Esri, Apple, Google, State Farm Insurance) and federal, state, and local governments positions that support an extensive range of critical services, including urban/community planning, crime analysis, estimating fire risk, emergency management, environmental sustainability, improving community resilience, and evaluating the efficacy and equity of public policies related to issues like broadband, housing, crime, the environment, and public health both in the United States and abroad.

SPP is a natural home for this major. The major will take advantage SPP's existing expertise in policy while leveraging the unique spatial research and education resources already available within the SPP and the broader UCR campus. SPP is home to a critical mass of cross-disciplinary faculty who either specialize in GIS and spatial analytic methods or use such methods in their research and policy engagement work. Furthermore, the UCR Center for Geospatial Sciences (CGS) serves as a secondary home to faculty with teaching and

research interests in GIS and spatial analysis – most of whom hold appointments in SPP. These faculty members contribute to a center that catalyzes and leverages existing strengths distributed across UCR to build a world-class reputation in spatial data science and policy analysis.

The proposed major would be unique to the University of California System. While some Geography programs offer undergraduate training in GIS (UCSB, UCLA, Berkeley), advanced degrees in GIS (UCSC), or certificates in GIS and geospatial technology (UCSD, UCD), no other UC campus has a program that integrates public policy and GIS. In fact, no program or university in the United States offers this unique blend of substantive training in public policy and spatial analysis methods.

Relationship of the new program to existing programs: SPP administers UCR's Public Policy major. The existing major trains students in how policy is created, what justifies policy, how policy impacts can be assessed, and provides professional development opportunities to facilitate students transition to the workplace. The Public Policy major emphasizes data management and traditional quantitative/statistical analysis to enable students to causally identify the impacts of policy. Students can choose from available upper division electives in policy to strengthen their knowledge of different aspects of policy. The GIS and Public Policy major will maintain the fundamental training in policy and quantitative methods of the existing major but will add deep training in GIS tools, spatial reasoning, and spatial analysis.

There are no other programs at UCR that have a relationship to this new major. CHASS and CNAS offer a few spatial analysis courses but they do not constitute a program.

The Proposed Curriculum for GIS and Public Policy
(See Appendix A)

Proposed Catalog Language
(See Appendix B)

List of faculty who will be involved in the program
All SPP faculty will be involved in the proposed program. Faculty participation in other dpeartments is limited to their teaching of ECON 003, MATH 004, and CS 009A.

Distinguised Professor
Bruce Link
Professors
Cecilia Ayon
Bruce Babcock (Associate Dean)

Ken Barenklau (Associate Provost)
Richard Carpiano
Tony Grubesic
Mark Long (Dean)
Ben Newman
Sharon Oselin
Qingfang Wang

Associate Professors

Ran Wei
Robynn Cox

Assistant Professors

Jennifer Guadette
Wei Guo
Wei Kang
Mehdi Nemati
Stan Oklobdzija

Assistant Professor of Teaching

Andrew Crosby

Projected enrollment in the program The proposed major is a unique major so it is somewhat speculative what enrollment will be. We explored three enrollment scenarios detailed below.

Scenario 1

Based on comparable R1 universities with GIS majors (UCSB, Arizona, Arizona State, Illinois Urbana Champaign, Oregon, Oregon State, Texas-Dallas, and University of Washington), and UCR's size, we expect a GIS major at UCR would yield about 100 students enrolled in the major each year and 25 to 30 graduates each year. This enrollment would increase SPP's enrollment and number of graduates by 33-40% over current levels.

Scenario 2

We generated the following prompts for Google's Gemini 2.5 Deep Research:

> *"The University of California - Riverside's School of Public Policy is considering starting a Bachelor of Science degree in "Geospatial Analysis and Public Policy". After this program is started and is in place for 5 years, what would you expect to be the number of new students it would enroll as majors in year 6?"*
>
> *"As a follow-up question, what effect would this Bachelor of Science degree in "GIS and Public Policy" have on enrollment in the University of California - Riverside's*

School of Public Policy's Bachelor of Arts in "Public Policy" degree? Specifically, after the B.S. in "Geospatial Analysis and Public Policy" program is started and is in place for 5 years, what would you expect to be the change in the number of new students in the BA in "Public Policy" degree in year 6?"

Gemini generated two reports, and these reports conclude that "the program would enroll approximately 90-110 new students as majors" and "in Year 6 of the new BS program, Gemini projected that the BA in 'Public Policy' will see a decrease of approximately 25 new students compared to its current stable enrollment." That is, we should expect a net effect of an additional 75-95 new students each year.

Scenario 3

For the 2024-25 year, SPP engaged Hanover Research to conduct research and develop strategies to boost enrollment. As part of that contract, SPP asked Hanover to produce a report on demand for a B.S. in GIS and Public Policy (as well as a master's degree in the same area).

This analysis finds robust growth in bachelor's degree conferrals over the past four years in GIS/Cartography (an annual growth rate of 25.4% in the Far West states). In addition, Hanover's research suggests that adding a B.S. degree in GIS and Public Policy could increase our total number of graduating students from around 85 to around 144. That is, it implies an additional 59 students per year.

Synthesis of Enrollment Projections

SPP's Public Policy major has had approximately 250 undergraduate students in recent years. This past fall, we enrolled approximately 70 new students, including new first-year students, transfers, and students who have switched majors at UCR . In recent years, we have been graduating approximately 85 students per year. Using those baselines, we could expect:

- Estimate 1: 40% increase in SPP total enrollment (100/250). 33% increase in graduates (27.5/83).
- Estimate 2: 85% increase in SPP total enrollment (85/100).
- Estimate 3: 59% increase in SPP total new enrollment (optimistic, 59/100) or 20% increase in SPP total new enrollment (pessimistic, 20/100).

Averaging these estimates (40%, 33%, 85%, 59%, and 20%) suggests a 47% increase in total enrollment (or approximately 119 students). The median estimate (a 40% increase) suggests a 100-student increase in total enrollment.

Name of degree Bachelor of Science.

List of resources needed: No additional resources will be needed. We have sufficient faculty, advising, career planning, and recruiting personnel to support the proposed major.

SPP will administer the major. Dean Mark Long enthusiastically supports this arrangement as documented in his attached letter. We ***do not*** anticipate needing any additional space or resources (e.g., library, career counseling, tutoring, or technology) to administer this major. Nor do we anticipate an undue burden on lower division courses for the major (ECON 003, MATH 004, CS 009A) – all of which are offered with regularity with large class sizes.

External and internal letters of support: See Appendix C

Approvals from program faculty: At the SPP faculty meeting held on January 16, 2026, SPP faculty voted unamimously (14 – 0) in favor of proposing this major for approval. SPP's Faculty Executive Committee approved this proposal on February 27, 2026.

Appendix A.

Proposed Curriculum for GIS and Public Policxy

This program is composed overwhelmingly from courses offered by SPP. The exceptions are ECON 003, Introduction to Microeconomics, MATH 004, Introduction to College Math for Business and Social Sciences, and CS 009A, Introduction to Computing.

We will be open to work with other units to consider whether it would be appropriate to include their upper-division GIS courses as additions to the elective list of "GIS Methods Core Courses" in this major. Of course, such changes will need to be approved by SPP faculty and the UCR Academic Senate.

All courses in this proposed major have been approved by the UCR Senate.

Lower-division requirements

9 courses, 36 credits

- PBPL 001: Introduction to Public Policy Analysis
- PBPL 002: Politics and Public Policy
- PBPL 004: Ethics, Professionalism, and Public Policy
- PBPL 010: Introduction to Geographic Information Systems
- ECON 003, Introduction to Microeconomics
- MATH 004, Introduction to College Math for Business and Social Sciences
- CS 009A, Introduction to Computing I (Python)
- PBPL 60A: Data Analysis for Public Policy 1 (4 credits)
- PBPL 60B: Data Analysis for Public Policy 2 (4 credits)

Upper-division requirements

10 courses plus internship (40 credits)

- PBPL 101: Research Methods in Public Policy (4 credits)
- GIS Methods Core Courses: Minimum 4 courses, 16 credits, selected from the following:
    - PBPL 150: Urban Informatics for Public Policy
        - Prerequisites PBPL 010
    - PBPL 151: GIS for Urban Transportation
        - Prerequisites PBPL 010, PBPL 100A, PBPL 100B
    - PBPL 152: Geoprogramming
        - Prerequisites CS 009A, PBPL 010
    - PBPL 153: Machine Learning and Deep Learning with GIS
        - Prerequisites CS 009A, PBPL 010
    - PBPL 154: Human-Centered Spatial Data Science

        - Prerequisites CS 009A, PBPL 010, PBPL 100A, PBPL 100B
    - PBPL 156: Geovisualization for Public Policy
        - Prerequisites CS 009A, PBPL 010
    - PBPL 158: Advanced Spatial Analysis
        - Prerequisites CS 009A, PBPL 010, PBPL 100A, PBPL 100B
    - PBPL 159: Drones and Geospatial Analysis for Public Policy
        - Prerequisites CS 009A, PBPL 010
- Additional Public Policy Electives: 4 courses, 16 credits
    - Any upper-division courses with numbers within the span of PBPL 102 and PBPL 189
- PBPL 198i: Individual Internship in Public Policy (4 credits)

Lower-Division Courses

PBPL 001: Introduction to Public Policy Analysis (4 Units)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** Introduces the basic concepts and processes underlying policy analysis. Includes application of these concepts to economic and budgetary policy, health care policy, welfare and social security policy, education policy, and environmental and energy policy.
- **Prerequisite(s):** None.

PBPL 002: Politics and Public Policy (4 Units)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** An introduction to the political institutions and processes that govern public policy in the United States and the tools and techniques used in public policy analysis. Part I presents policymaking models and methods of policy analysis. Part II applies these concepts to specific policy areas, illustrated by real-world case studies.
- **Prerequisite(s):** None.

PBPL 004: Ethics, Professionalism, and Public Policy (4 Units)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** Explores the ethical dimensions of public policy and the professional responsibilities of policy analysts and public officials. Focuses on the normative bases of policy decisions.
- **Prerequisite(s):** None.

ECON 003: Introduction to Microeconomics (5 Units)

- **Format:** Lecture, 3 hours; discussion, 1 hour; written work, 3 hours.
- **Full Description:** An introduction to the study of the economic system from the micro, or individual decision-maker's, perspective. Includes the study of opportunity cost, markets, consumption, production, and competition. Credit is awarded for one of the following ECON 003 or ECON 003H.
- **Prerequisite(s):** None.

CS 009A: Data-Oriented Introduction to Computing I (4 Units)

- **Format:** Lecture, 3 hours; laboratory, 3 hours.
- **Full Description:** Covers computational thinking, problem-solving, and data analysis using the Python language through application-based data manipulation tasks from science, engineering, business, and the humanities. Includes variables, expressions, branches, loops, functions, parameters, lists, strings, file I/O, and exception handling. Also covers software design, testing, and debugging. Credit is awarded for one of the following CS 009A or CS 010A.
- **Prerequisite(s):** MATH 004, may be taken concurrently or MATH 005A, may be taken concurrently or MATH 006A, may be taken concurrently or MATH 006B, may be taken concurrently or MATH 007A, may be taken concurrently or MATH 009A, may be taken concurrently or MATH 09HA, may be taken concurrently or MATH 022, may be taken concurrently.

MATH 004: Introduction to College Mathematics for Business and the Social Sciences (5 Units)

- **Format:** Lecture, 3 hours; additional lecture, 2 hours.
- **Full Description:** Covers functions and their graphs, including linear and polynomial functions, zeroes, and inverse functions as well as exponential, logarithmic, and trigonometric functions and their inverses. Also includes counting, including elementary probability. Involves applications to business and social sciences. Credit is awarded for only one of MATH 004, MATH 005, MATH 008A or the MATH 006A and MATH 006B sequence.
- **Prerequisite(s):** a sufficiently high score on the Mathematics Advisory Examination, as determined by the Mathematics Department; or MATH 003 or MATH 004L, which may be taken concurrently; or a score of 2 on the AP Calculus AB Exam.

PBPL 010: Introduction to Geographic Information Systems (4 Units)

- **Format:** Lecture, 3 hours; laboratory, 3 hours.
- **Full Description:** An introduction to the use of Geographic Information Systems (GIS) for mapping and spatial analysis within the context of public policy.
- **Prerequisite(s):** None.

PBPL 050: Introduction to Public Policy Major and University (2 Units)

- **Format:** Lecture, 1 hour; written work, 3 hours.
- **Full Description:** Introduces the Public Policy major. Provides opportunities to engage with Public Policy faculty and advisors to learn about research and program requirements. Explores the structure, culture, and various support systems in place in the University. Addresses student success in the major. Graded Satisfactory (S) or No Credit (NC).
- **Prerequisite(s):** None.

PBPL 60A: Data Analysis for Public Policy 1 (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Introduction to data input, output, and calculation of key summary statistics. Explores concepts of correlation, measurement, and the requirements for establishing causality. Covers regression analysis, the normal distribution, and the law of large numbers.
- **Prerequisite(s):** PBPL 001 with a grade of C- or better; CS 009A with a grade of C- or better; restricted to class level standing of junior or senior; or consent of instructor.

PBPL 60B: Data Analysis for Public Policy 2 (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Introduction to the concept of sampling uncertainty and hypothesis testing required to establish causal inference. Explores inclusion of control variables in a multiple regression framework and why data generated from natural experiments and randomized control trials are valuable to policy analysts.
- **Prerequisite(s):** PBPL 060A with a grade of C- or better; restricted to class level standing of junior or senior; or consent of instructor.

Upper-Division Courses

PBPL 101: Case Studies in Public Policy (4 Units)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** Explores one or more policy issues in depth. Includes transportation, crime, immigration, healthcare, poverty, inequality, social policy, environment, and natural resources. Involves training in social science and public policy methods including case studies, surveys, experiments, and others. Course topics vary reflecting faculty expertise.
- **Prerequisite(s):** ECON 003 with a grade of C- or better or ECON 003H; PBPL 002 with a grade of C- or better; STAT 004 or STAT 008 or POSC 114 or POSC 114S or ECON 101 or PSYC 011 or SOC 005 or STAT 010.

PBPL 102: Borderland Policies and Community Change (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Examines policies affecting border regions, immigration, and the resulting social and economic changes in those communities. Focuses on the impact of policy on community processes and development.
- **Prerequisite(s):** Upper-division standing or consent of instructor.

PBPL 103: Economic Development Policy (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Analyzes the role of government policy in promoting or hindering economic growth at the local, state, and national levels. Covers theories of development and empirical evidence of policy impacts.
- **Prerequisite(s):** ECON 003.

PBPL 105: Qualitative Research Methods (4 units)

- **Format:** Lecture, 3 hours; individual study, 2 hours; written work, 1 hour.
- **Full Description:** Introduces a variety of qualitative research methods used in social science and public policy. Examines various stages and techniques of qualitative methods including research design, ethics, participant observation, focus groups, interviewing, analysis, and fieldwork. Reveals utility of methods in public policy and gaining insight on complex social issues.
- **Prerequisite(s):** Upper-division standing or consent of instructor.

PBPL 110: Basics of Public Budgeting and Finance (4 units)

- **Format:** Lecture, 3 hours; extra reading, 2 hours, written work, 1 hour.
- **Full Description:** Covers the basics of public sector budgeting and financing, which are central to nearly every facet of public policy. Includes operating and capital budgets, the funding of budgets, personnel issues, analytical techniques, financial management, and effectively communicating data to stakeholders.
- **Prerequisite(s):** PBPL 001 with a grade of C- or better and upper-division standing or consent of instructor.

PBPL 121: Crime and Public Policies (4 units)

- **Format:** Lecture, 3 hours; extra reading, 2 hours; written work, 1 hour.
- **Full Description:** Reviews various crime and criminal-justice system topics, the problems that accompany them, and policies and practices that address them. Links practice and policy. Encourages analytical and strategic thinking about these issues and policies.
- **Prerequisite(s):** PBPL 001 with a grade of C- or better and upper-division standing or consent of instructor.

PBPL 127: Sociological Determinants of Health (4 units) (Cross-listed with SOC 127))

- **Format:** Lecture, 3 hours; discussion, 1 hour
- **Full Description:** Introduces the role that social factors play in shaping the occurrence and distribution of disease and death in populations with an emphasis on socioeconomic status, racism, social relationships and social stress. A particular emphasis is placed on sociological origins of health inequalities. Cross-listed with SOC 127.
- **Prerequisite(s):** SOC 001 with a grade of Cor better or SOC 001H with a grade of C- or better; or consent of instructor

PBPL 130: Management of International Waters (4 units) (Cross-listed with GBST 130)

- **Format:** Lecture, 3 hours; research 3 hours.
- **Full Description:** Explores basic concepts of international water law. Examines how these concepts, as well as conflict definitions, negotiation principles, and cooperation principles, are applied to international waters. Includes analysis of several major international water cases utilizing contemporary literature. Cross-listed with GBST 130.
- **Prerequisite(s):** upper-division standing or consent of instructor.

PBPL 132: Water Economics, Management and Policy: California and Beyond (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Introduction to the complexities of water resource economics, management and policy in California, and comparison to other states and countries. Evaluates the California water sector, its problems, and approaches used to address them.
- **Prerequisite(s):** Restricted to class level standing of junior or senior.

PBPL 133: Cost Benefit Analysis for Public Policy (4 units)

- **Format:** Lecture, 3 hours; extra reading, 2 hours; written work, 1 hour.
- **Full Description:** Provides the skills needed to be producers and critical consumers of Cost-Benefit Analysis (CBA). Studies the basic methodological tools needed to conduct a CBA. Engages with key conceptual issues related to risk and uncertainty, intergenerational discounting, inequality, and the value of human life.
- **Prerequisite(s):** ECON 003 with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 150 Urban Informatics for Public Policy (4 Units)

- **Format:** Lecture, 3 hours; research, 2 hours; term paper, 1 hour.
- **Full Description:** Analyzes the spatial structure of cities for a range of socioeconomic issues such as demographic changes, affordable housing, and economic development. Utilizes up-to-date geographic information systems (GIS) techniques to gain hands-on learning experiences with the core theories in urban geography and their policy applications in both U.S. and international contexts.
- **Prerequisites:** PBPL 010 with a grade of C- or better; restricted to class level standing of junior, or senior; or consent of instructor.

PBPL 151 Geographical Information Systems for Urban Transportation (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Studies transportation analysis through the lens of geographic information science/systems, or GIS-T. Surveys current ideas and issues in the transportation field. Conveys concepts critical to understanding transportation from spatial and user perspectives. Includes the social, political, economic, environmental, and policy consequences/outcomes of transportation.
- **Prerequisites:** PBPL 010 with a grade of C- or better, PBPL 060A with a grade of C- or better, PBPL 060B with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 152 Geoprogramming (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Introduces basic computational concepts using Python, an object-oriented scripting language, for data processing, analysis, and visualization in geographic research. Provides high-demand skill sets within public policy, commercial and nonprofit spatial data analytics sectors, and GIS development.
- **Prerequisites:** PBPL 010 with a grade of C- or better, CS 009A with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 153 Machine Learning and Deep Learning with Geographical Information Systems. (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Introduces the concept of GeoAI, interdisciplinary field between geography and artificial intelligence (AI). Provides novel approaches for addressing various geospatial problems in the natural environment and human society. Explores machine learning concepts and models and how to use them to address geospatial problems. Emphasizes both theoretical concepts and hands-on skills.
- **Prerequisites:** CS 009A with a grade of C- or better, PBPL 010 with a grade of C- or better, PBPL 060A with a grade of C- or better, PBPL 060B with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 154 Human-Centered Spatial Data Analysis (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Provides students the skills and knowledge needed to explore and analyze 'big data' with an understanding of technical, social, and ethical considerations. Students will understand how one can use spatial theories, data, and analytics to develop strategies, plans, and policies to improve business and community operations and public policy.
- **Prerequisites:** PBPL 010 with a grade of C- or better, CS 009A with a grade of C- or better, PBPL 060A with a grade of C- or better, PBPL 060B with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 155: Women's Labor and the Economy (4 units) (Cross-listed with ECON 155 and GSST 155)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** A special-topics based labor economics course. Focuses on one important dimension of worker differences: gender. Covers the topics of human capital, wages and employment, occupational choice, discrimination, the family as an economic unit, and public policy. Cross-listed with ECON 155 and GSST 155.
- **Prerequisite(s):** ECON 102 or ECON 104A.

PBPL 156 Geovisualization for Public Policy (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Introduces the unique nature of spatial data and how to apply spatial data analysis and geovisualization techniques to policy problems. Highlights ways to think creatively about policy through a spatial lens and understand the challenges of using data to develop robust strategies and solutions through visual means.
- **Prerequisites:** PBPL 010 with a grade of C- or better, CS 009A with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 157: Labor in the Public Sector (4 units) (Cross-listed with ECON 157)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** A labor economics course on employment in the public sector. Explores questions of wages and contract structuring, recruitment, training, risk, collective bargaining, licensing, rentseeking and corruption, and influence in the public sector. Cross-listed with ECON 157.
- **Prerequisite(s):** ECON 102 or ECON 104A.

PBPL 158 Advanced Spatial Analysis (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Examines conceptual and applied aspects of spatial statistical methods. Focuses on the computational aspects of Exploratory Spatial Data Analysis (ESDA) methods for three different types of spatial data: lattice, point processes, and geostatistical. Develops familiarity with the fundamental methodological and operational issues in the statistical analysis of geographic information.
- **Prerequisites:** CS 010 with a grade of C- or better, PBPL 010 with a grade of C- or better, PBPL 060A with a grade of C- or better, PBPL 060B with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 159 Drones and Geospatial analysis for Public Policy (4 Units)

- **Format:** Lecture, 3 hours; individual study, 3 hours.
- **Full Description:** Provides skills and knowledge needed to understand remotely sensed imagery and use of unmanned aerial vehicles. Provides the foundational skills for using remotely sensed data and spatial analysis techniques. Encourages creative thinking about policy challenges and how the fusion of secondary data sources provides unique insights and solutions.
- **Prerequisites:** PBPL 010 with a grade of C- or better, CS 009A with a grade of C- or better; restricted to class level standing of junior, or senior.

PBPL 160: Immigrant Health and Wellbeing (4 Units)

- **Format:** Lecture, 3 hours; individual study, 2 hours; term paper, 1 hour.
- **Full Description:** Introduction to community-engaged methods in health disparities research. Examines health disparities and social determinants of health and conducts in-depth examination of community engaged research methods. Provides theoretical principles, methods, and skills needed to plan and implement community-engaged research.
- **Prerequisite(s):** Restricted to class level standing of junior or senior.

PBPL 162: Health in All Policies (4 Units)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** Explores social influences on health and the role that public policies play in shaping the social determinants of health. Examines the link between social circumstances (socioeconomics, race, ethnicity, environment) and health outcomes. Identifies connections and considers whether and to what extent public policy mitigates harmful influences or stimulates positive outcomes.

- **Prerequisite(s):** PBPL 001 with a grade of C- or better or SOC 001 with a grade of C- or better or SOC 001H with a grade of B or better; restricted to class level standing of junior or senior.

PBPL 164: Social Innovation in Theory and Practice (4 units)

- **Format: Lecture, 3 hours; extra reading, 3 hours.**
- **Full Description:** Introduction to theories and practices associated with social innovation and public policy. Explores key concepts and debates in the field of social innovation including social entrepreneurship, systems approaches, and design thinking. Evaluates practices of social innovation through case studies and applications to policy and civic engagement.
- **Prerequisite(s):** restricted to class level standing of junior, or senior.

PBPL 166: Intergovernmental Relations (4 units)

- **Format: Lecture, 3 hours; extra reading, 2 hours; written work, 1 hour**
- **Full Description:** Introduction to American intergovernmental relations. Topics include federalism, fiscal federalism, national-state, interstate, state-local, and national local relations; tribal governments; networks; and interstate relations. Examines current intergovernmental problems and formulates recommendations to policymakers.
- **Prerequisite(s):** restricted to class level standing of junior, or senior; or consent of instructor.

PBPL 167: Medical Sociology (4 units) (Cross-listed with SOC 167)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** Introduces key concepts and theories in medical sociology and their application to a variety of health issues. Exemplar topics include social construction of health and illness, medicalization, stigma and labeling, patientprovider interaction, sociology of medical professionals, social determinants of health, and political economy of health. Cross-listed with SOC 167.
- **Prerequisite(s):** restricted to class level standing of junior, or senior; or consent of instructor.

PBPL 170: Techhnology, Policy, and Ethics (4 units) (Cross-listed with ENGR 170)

- **Format:** 4 Lecture, 3 hours, discussion, 1 hour.
- **Full Description:** Provides contemporary perspectives on interplays between technology, public policy, and ethics. Covers social, legal, and ethical issues such as liability, as well as environmental, patent, and copyright law. Cross-listed with ENGR 170.
- **Prerequisite(s):** upper-division standing.

PBPL 171: Globalization (4 Units) (Cross-listed with ENGR 171)

- **Format:** Lecture, 3 hours; discussion, 1 hour.
- **Full Description:** Covers technological drivers of globalization. Includes social, economic, and political consequences. Explores the cultural aspects of globalization, including barriers and drivers for economic and cultural

interdependence and integration. Also explores virtual global organizations. Cross-listed with ENGR 171 and NASC 171.

- **Prerequisite(s):** Restricted to class level standing of junior or senior.

PBPL 172: Environmental Policy (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Provides overview of United States and California environmental policy. Examines economic and political justification for government intervention, different policy tools available to improve environmental quality, and the political, legal, and economic forces that determine policy outcomes. Reviews current environmental issues including climate change, air quality, water quality, and energy policy.
- **Prerequisite(s):** ECON 003 or ECON 003H; restricted to class level standing of junior or senior.

PBPL 177: Housing Policy (4 units)

- **Format:** Lecture, 3 hours; extra reading, 2 hours; written work, 1 hour.
- **Full Description:** Introduces affordable housing policies in the United States. Explores the key policy tools available to build, maintain, and preserve affordable housing. Draws on current social science research to evaluate the effectiveness of these programs and identify challenges to current policy.
- **Prerequisite(s):** PBPL 001; restricted to class level standing of junior, or senior.

PBPL 178: Urban Issues and Policy (4 units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Covers theories and explanations regarding urban struggles in contemporary times. Discusses forces and social structures 590 |that influence cities and the experiences of PBPL 186 Policy Evaluation in Graduate Courses urban dwellers. Encourages analytical and strategic thinking about these issues and discusses policies that ameliorate them. Considers the role policies play in contributing to and addressing urban problems. Credit is awarded for one of the following PBPL 178, PBPL 182, SOC 182, or URST 182.
- **Prerequisite(s):** restricted to class level standing of junior, or senior; or consent of instructor.

PBPL 179: Public Policy and Digital Platforms (4 units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Explores digital platforms such as Instagram, TikTok, and X and their rapid global user growth during the past few decades. Discusses the issues resulting from this boom including free speech, censorship, and online safety. Addresses the question of government's role in regulating digital platforms.
- **Prerequisite(s):** restricted to class level standing of junior, or senior.

PBPL 182: Urban Problems (4 Units) (Cross-listed with SOC 182 and URST 182)

- **Format:** Lecture, 3 hours; discussion, 1 hour; term paper, 1 hour.
- **Full Description:** An interdisciplinary examination of selected urban problems such as civil disorders, transportation, housing, welfare, and planning. Cross-listed with

SOC 182 and URST 182. Credit is awarded for only one of PBPL 182, SOC 182, URST 182, or PBPL 178.

- **Prerequisite(s):** Restricted to class level standing of junior or senior.

PBPL 184: Law and Justice (4 units)

- **Format:** Lecture, 3 hours; written work, 2 hours; extra reading, 1 hour.
- **Full Description:** Provides an overview of the criminal justice system. Covers the role of the District Attorney and the Public Defender's offices. Examines the judicial branch and modern-day courts. Discusses law enforcement's role along with the Probation Department and the Department of Mental Health. Analyzes the justice system reform.
- **Prerequisite(s):** restricted to class level standing of junior, or senior.

PBPL 185: Race and Law Enforcement (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 2 hours; written work, 1 hour.
- **Full Description:** Explores the role of race and ethnicity in the historical and contemporary practice of United States law enforcement. Evaluates the study of race and policing to explore the evidence of racial bias in the application of police tactics and uncover evidence-based methods for reducing racial disparities in policing outcomes.
- **Prerequisite(s):** Restricted to class level standing of junior or senior; or consent of instructor.

PBPL 186: Policy Evaluation in Development Economics (4 Units)

- **Format:** Lecture, 3 hours; extra reading, 3 hours.
- **Full Description:** Focuses on the methods used to evaluate the effectiveness and efficiency of public policies and programs. Includes discussion of experimental and quasi-experimental designs, cost-benefit analysis, and qualitative evaluation techniques.
- **Prerequisite(s):** ECON 003 or ECON 003H; or consent of instructor

PBPL 190: Special Studies (1–5 Units)

- **Format:** Individual study, 3–15 hours.
- **Full Description:** Individual study, under the direction of a faculty member, of a specific policy problem or topic.
- **Prerequisite(s):** Consent of instructor and School of Public Policy.

PBPL 191: Professional Engagement in Public Policy (4 Units)

- **Format:** Seminar, 3 hours; extra reading, 3 hours.
- **Full Description:** A seminar designed to prepare students for professional careers through engagement with practitioners and real-world policy problems. Includes guest lectures and professional development workshops.
- **Prerequisite(s):** PBPL 001 and PBPL 002; upper-division standing.

PBPL 197: Research for Undergraduates (1–4 Units)

- **Format:** Individual study, 3–12 hours.
- **Full Description:** Independent study for students desiring to conduct research in public policy under the supervision of a faculty member.
- **Prerequisite(s):** Consent of instructor and School of Public Policy.

PBPL 198I: Individual Internship in Public Policy (1–12 Units)

- **Format:** Internship, 2–24 hours; written work, 1–12 hours.
- **Full Description:** Supervised internship in a public or non-profit agency, allowing students to apply classroom knowledge to professional policy work.
- **Prerequisite(s):** Upper-division standing and consent of instructor.

Appendix B.
Catalog Copy

Present

Proposed

Major
GIS and Public Policy applies cutting-edge spatial analysis theories, concepts, and methods to the complexity of public policy analysis. Drawing on the expertise of the School of Public Policy faculty, this major will equip students with the spatial reasoning and analytical skills necessary to address complex, real-world research questions and policy development challenges. From evaluating inequities in infrastructure provision, such as broadband or healthcare resources, to assessing risks and developing policies to mitigate the potential impacts of natural or technological hazards, spatial data analysis is integral to deepening our understanding of human, environmental, and policy landscapes.

The major combines courses in public policy with courses in cartography and geovisualization, spatial analysis, GIS, human-centered spatial data science, remote sensing, and geospatial artificial intelligence (GeoAI), complementing foundational substantive and methodological coursework in the field of public policy. The major engages with contemporary scientific and policy challenges where a spatial perspective is vital to comprehensively understanding the causes of such challenges as well as designing, implementing, and evaluating practical efforts to address them.

Career Opportunities
Graduates of this program will be highly competitive for jobs in industry (e.g., Esri, Apple, Google, State Farm Insurance) and federal, state, and local governments positions that support an extensive range of critical services, including urban/community planning, crime analysis, estimating fire risk, emergency management, environmental sustainability, improving community resilience, and evaluating the efficacy and equity of public policies related to issues like broadband, housing, crime, the environment, and public health both in the United States and abroad.

University Requirements
See Undergraduate Studies Section

College Requirements
See School of Public Policy Section

Major Requirements
The major requirements for the B.S. degree in Geographic Information Systems and Public Policy are as follows:

Students will not be admitted into the major until they have completed PBPL 001 with a "C"grade or better.

1. Lower-division requirements (9 courses [at least 36 units])
a. PBPL 001
b. PBPL 002
c. PBPL 004
d. PBPL 010
e. ECON 003

f. MATH 004
g. CS 009A
h. PBPL 060A
i. PBPL 060B

2. Upper-division requirements (10 courses [at least 40 units])
a. PBPL 101
b. GIS Methods Courses: Minimum 4 courses (16 units) selected from the following:

- PBPL 150, PBPL151, PBPL 152, PBPL 153, PBPL 154, PBPL 156, PBPL 158, PBPL 159

c. Additional Public Policy Elective (4 courses [atleast 16 units])

- Any upper-division PBPL courses with numbers within the span of PBPL 102 and PBPL 189

d. PBPL 198i (must be taken for a minimum of 4 units)

Appendix C
Letters of Support

UC RIVERSIDE
School of Public Policy

Mark C. Long, Dean and Professor
University of California, Riverside
INTS 4133 | 900 University Ave
Riverside, CA 92521

February 26, 2026

This proposed undergraduate degree in *GIS and Public Policy* has my full and enthusiastic support. The School of Public Policy has the intellectual and staffing resources to make this program successful and I am committed to providing the school financial and staff resources to ensures its success. This program leverages our School's unique strengths in understanding the intersection of geospatial analysis and public policy to create something truly unique and special. This program will be the first of its kind in the country – which is, in a sense, surprising because public policy is fundamentally allocated in geographic space.

HOW IS GEOSPATIAL ANALYSIS used in PUBLIC POLICY?

Advocacy
Advocates for policy change can use policy evaluations that incorporate geospatial analysis to make their case to policymakers and judges. For example, advocates can show that residents in a particular location are adversely affected by pollution to lobby for mitigation efforts. Advocates for the homeless could show where housing is unaffordable or absent. Businesses could show that a particular route for expanded telecommunications equipment would be beneficial given their firm locations and would be cost effective to install.

Policy Design and Pre-Assessment
Geospatial analysis can support the development of new legislation and court decisions by modeling the likely effects of policy change. For example, geospatial analysts can model the likely reduction in fatal crashes and changes in traffic flows if the legislature approves funding for the installation of traffic cameras. Geospatial analysts can model current and future flooding and wildfire risk and show how policy changes might affect those risks.

Implementation Analysis
Public policy analysts can document where policy is being implemented as intended and where it is not. They can show how the spatial distribution of implementation fidelity corresponds to the spatial distribution of resources. The uses of geospatial analysis in the conduct of public management are nearly endless. At the 2025 Esri User Conference, there were demonstration booths for the following topics:

> Defense and Intelligence; Public Safety, Fire, Rescue, and EMS; Humanitarian Action; Sustainable Development; Nonprofits; Conservation; Climate Action; Lands, Records, and Property Value Analysis; Native Nations; Community Development; Housing Policy; Parks and Recreation; Land and Wildlife Management; Environmental Protection; Equity and Social Justice; Community Engagement; Public Works; Transportation; Health and Human Services; Public

Health; Architecture and Urban Design; Utilities, Telecom, and Water; Natural Resources; Extreme Weather and Marine Science; and Education, among others.

Geospatial Data Collection Showing How Policy Affects Outcomes

State, local, and national governments collect data with geospatial identifiers. These data are used to show the spatial distribution of resources and activities. As this data changes over time, public policy analysts can document the effects of policy. In the U.S. federal government, here are some of the agencies collecting this data and their uses:

- U.S. Geological Survey: A primary federal agency for geospatial data, responsible for The National Map, elevation data, topographic maps, hydrography, geologic maps, and remote sensing data.
- National Oceanic and Atmospheric Administration: Collects extensive geospatial data related to oceans, coasts, weather, and climate, including bathymetry, nautical charts, environmental information, and weather/climate maps.
- U.S. Census Bureau: Provides demographic and economic geospatial data through its TIGER/Line Shapefiles and other Census GIS data, used for mapping population and administrative boundaries.
- U.S. Department of Agriculture: Various agencies within USDA collect geospatial data for natural resources, agriculture, and land management, including the Natural Resources Conservation Service and its Geospatial Data Gateway, and the Foreign Agricultural Service for crop assessments.
- Environmental Protection Agency: Utilizes geospatial data for environmental monitoring, regulation, and assessment, with resources like EnviroAtlas and other geospatial data and applications related to environmental protection.
- Federal Emergency Management Agency: Collects and uses geospatial data for disaster preparedness, response, and recovery, notably through its flood maps (FEMA Flood Map Service Center) and geospatial analytics.
- National Geospatial-Intelligence Agency: A combat support agency and intelligence agency that is a world leader in geospatial intelligence, providing timely, accurate, and actionable geospatial information.
- U.S. Department of Transportation: Agencies like the Bureau of Transportation Statistics and the Federal Highway Administration collect geospatial data related to transportation infrastructure, traffic, and transit systems.
- U.S. Department of Housing and Urban Development: Uses geospatial data for urban planning, community development, and housing initiatives, including formula grantee boundary files.
- U.S. Fish and Wildlife Service: Employs GIS, GPS, and remote sensing for wildlife management, habitat conservation, and environmental analysis.
- National Park Service: Utilizes GIS and related technologies for managing national parks, resources, and visitor services.

- Bureau of Land Management: Manages public lands and collects geospatial data related to land records, natural resources, and land use planning.
- Federal Communications Commission: Provides geospatial tools and data related to FCC licensing, regulated towers, and market area boundaries.

Policy Evaluation

Geospatial analysis is commonly used to help evaluate the effects of government programs. For example, policy analysts have shown how local minimum wage laws have labor market effects that spillover jurisdictional boundaries (and this fact, in turn, draws into question analyses that use neighboring jurisdictions as the "control group" in studying the effect in the "treated" jurisdiction). Policy analysts have shown how the elimination of affirmative action in nearby universities has affected the college-going of underrepresented student groups. Policy analysts have documented the geospatial relationship between students' test scores and air quality in the region. These analyses become critical ingredients in the next round of advocacy for policy change.

LABOR DEMAND FOR BACHELOR'S DEGREES IN GIS / GEOSPATIAL ANALYSIS

Labor demand for bachelor's degree in this field is very high and growing. A search that I conducted on "indeed.com" in August found over 15,000+ jobs with "GIS" and 3,000+ jobs with "Geospatial" as keywords. Restricting those jobs to "California", "Bachelor's Degree", and "Entry Level" resulted in hundreds of jobs with a median salary range of $70,000 - $88,440 – which I would characterize as well paying for entry-level post-baccalaureate work. Restricted to government jobs produced the following job titles with similar salary levels (median $72,641 - $92,824):

- GIS Analyst, City of Beaumont.
- Environmental Scientist, California Department of Toxic Substances Control.
- Permit Technician I, City of Torrance.
- GIS Specialist, Kern County.
- Planning Assistant, City of West Covina.
- Assistant Planner, City of Riverside.
- Crime Analyst Assistant, City of Rialto.
- Environmental Specialist I/II, City of Folsom.
- Crime Analyst: City of Riverside.
- Environmental Specialist I/II: City of Vista.
- Planning Assistant, City of Torrance.
- Assistant Planner, City of Bellflower.
- Assistant Planner, City of Lompoc.
- Assistant Planner, Riverside County.
- Permit Services Specialist, City of Pasadena.
- GIS Analyst, City of Riverside.
- Assistant Planner, City of Davis.

- Associate Transportation Planner, Inyo County.
- Research Data Specialist II, Caltrans, Caltrans.
- Associate Planner, City of Pasadena.
- Principal Environmental Specialist, City of El Segundo.

The prevalence of GIS in government work is reflected in the City of Riverside's GIS Day, which featured how GIS is being used throughout the city's agencies:

Concluding Thoughts

Perhaps the two most important pieces of geospatial public policy analysis affecting California during the past year were regarding the state's updated fire hazard severity zones and citizens' passage of Proposition 50, which will redistrict Congressional boundaries (see maps on subsequent pages). Careful analysis of fire risk and the wisdom of changing the fire hazard severity zones involves both an understanding of the actual fire risk and an understanding of what impacts these new maps will have on expenditures that must be made, as a result, by local governments and property owners. Careful analysis of changes in Congressional district boundaries requires both an analysis of how the new district boundaries will affect political outcomes as well as – hopefully – a careful analysis of the impacts on representation, stability, and faith in democracy.

Good public policy analysis regarding spatially distributed resources is not simply about making attractive maps. It is about extracting meaning from spatial relationships and then combining that with well-developed training in public ethics, economics, the politics of the policy process, etc. – i.e., the courses required in this degree. This degree will give students a unique and valuable set of skills and thus I fervently support its approval.

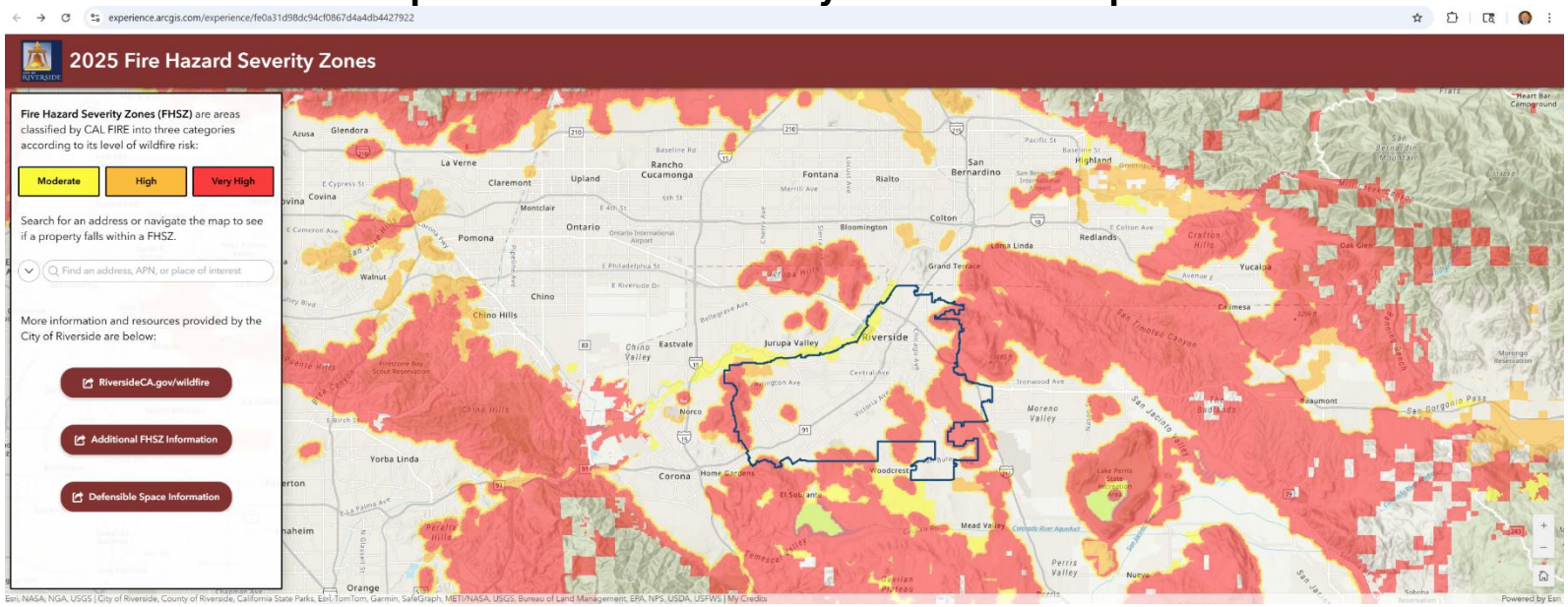
Finally, I welcome the development of GIS programs in other UCR schools and colleges. I am aware that we offer GIS courses in CNAS, BCOE, CHASS, and the School of Business. After this major is approved, I will recommend to SPP faculty that appropriate GIS courses from other UCR schools and colleges be considered for addition to the list of elective courses in this major (and I recognize that such additions will require UCR Academic Senate review and approval).

Sincerely,

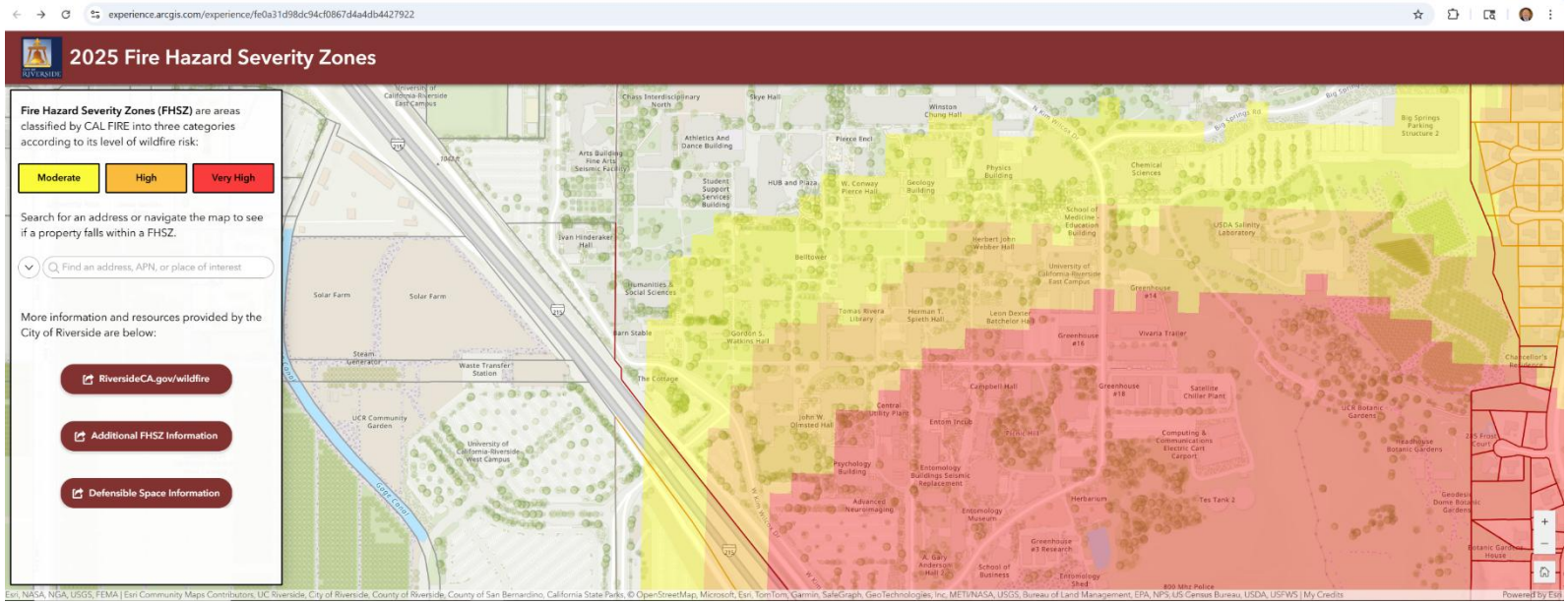
Mark Long

Public Policy Example 1:

Updated Fire Hazard Severity Zones: Inland Empire:

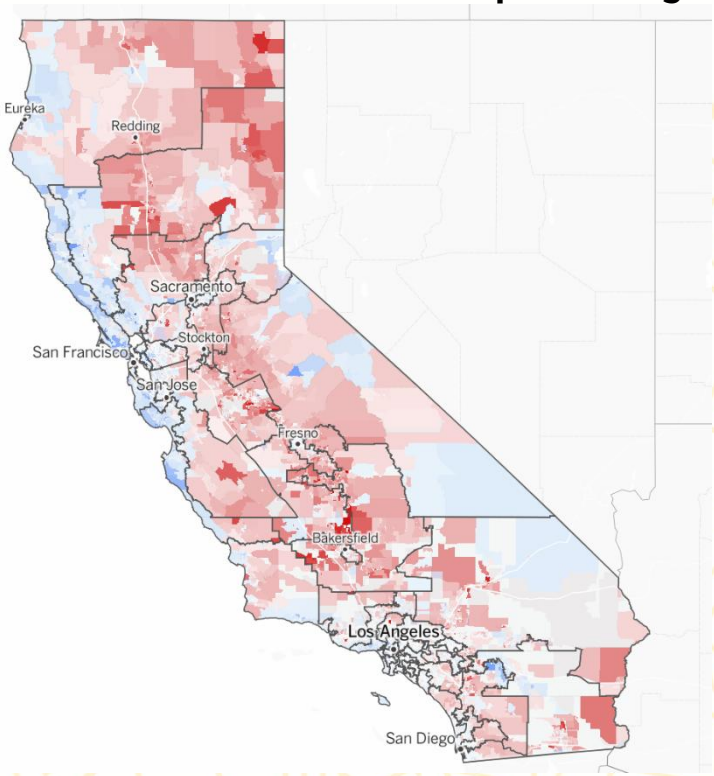


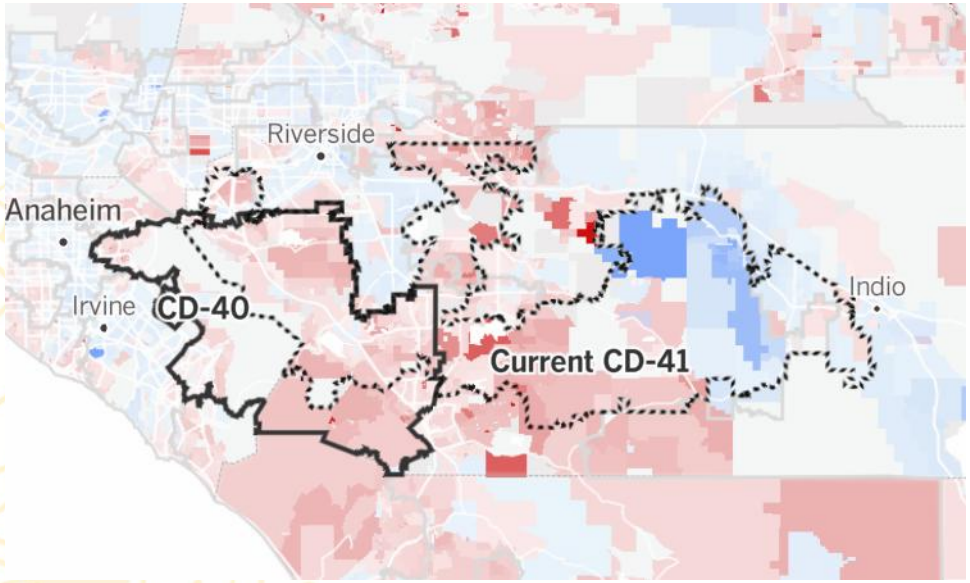
Updated Fire Hazard Severity Zones: UC-Riverside:



Public Policy Example 2:

Proposed Congressional Redistricting (Prop. 50):





Source: https://www.latimes.com/california/story/2025-08-27/proposed-california-congressional-district-map-democrats-republicans

UC RIVERSIDE
Marlan and Rosemary Bourns
College of Engineering

Office of the Dean
900 University Avenue
446 Winston Chung Hall
Riverside, CA 92521

January 23, 2026

To Whom It May Concern:

I am providing this letter on behalf of the Marlan and Rosemary Bourns College of Engineering in support of the proposed new Bachelor of Science (B.S.) degree in Geographic Information Systems (GIS) and Public Policy (GISPP).

I have requested feedback on this proposal from Prof. Christian Shelton, Chair of Computer Science, and from Profs. Amr Magdy, Vassilis Tsotras, and Ahmed Eldawy who conduct research in GIS related areas. All were supportive of the proposed GISPP. Some of the comments included a consensus that should our CS department in the future wish to pursue a computational GIS related degree, the GISPP would be complementary, this could offer an opportunity for a GIS minor or a CS + GIS degree program, and that CS will be supporting two of the courses and has the capacity to provide this support.

Given this feedback, I am strongly supportive of this proposed program.

Sincerely yours

Prof. Christopher S. Lynch
William R. Johnson Jr. Family Chair
Dean, Bourns College of Engineering
University of California, Riverside

College of Natural and Agricultural Sciences
Office of the Dean
900 University Avenue
2300 Olmsted Hall
Riverside, CA 92521

February 26, 2026

Professor Mark Long
Dean, School of Public Policy
University of California
Riverside, CA

Dear Mark,

I write in support of your school's proposal to develop a new Bachelor of Science in Geographic Information Systems and Public Policy (GISPP). I believe this major will offer students a great opportunity to develop their career goals across this field and will also provide opportunities for collaborations with departments in the College of Natural & Agricultural Sciences (CNAS). Should CNAS departments wish to develop a related GIS degree, I see the possibility of complementarity between what GIS-related courses may be offered in CNAS and what is offered in the School of Public Policy (SPP), with the possibility of a GIS minor or a joint degree program. I believe that your proposal will strengthen both CNAS and SPP through this approach by expanding options for students in this growing discipline and increasing enrollment, especially from students in the Inland Empire and across Southern California.

Sincerely yours,

Peter W. Atkinson
Dean, College of Natural & Agricultural Sciences
UC Riverside

UCLA Luskin School of Public Affairs

Anastasia Loukaitou-Sideris
Interim Dean & Distinguished Professor of Urban Planning
UCLA Luskin School of Public Affairs
3250 Public Affairs Building, Box 951656
Los Angeles, CA 90095-1656
p: (310) 206-8858 e: sideris@ucla.edu

luskin.ucla.edu

March 8, 2024

Mark Long, MPP, PhD
Dean and Professor
School of Public Policy
University of California, Riverside

Dear Mark,

Thank you for the opportunity to review the proposed Bachelor of Science in *Geographic Information Systems and Public Policy* at your school. The proposal has been crafted with thoughtfulness and thoroughness and I have every reason to believe it will succeed. The UCR School of Public Policy seems to be an ideal location for such a degree, as it already hosts the Center for Geospatial Sciences that leverages spatial analytics, geocomputation, and geoinformatics for problem solving. The school also has strong expertise in GIS, with multiple faculty members holding PhD degrees in GIS and Geography. Lastly, I believe that the program would meet a market need, as I know that public policy graduates with spatial analysis and GIS skills are highly recruited by public and private sector firms.

For all the above reasons, I am delighted to support the proposal and wish you all the best.

Sincerely,

Anastasia Loukaitou-Sideris
Interim Dean
Distinguished Professor of Urban Planning
UCLA Luskin School of Public Affairs

Berkeley Public Policy
The Goldman School

The Office of Dean David C. Wilson

2607 Hearst Avenue
Berkeley, CA 94720-7320
gsppdean@berkeley.edu

January 26, 2026

Subject: Letter of Support

To Whom It May Concern:

I am supportive of the proposal by UC-Riverside's School of Public Policy to launch a Bachelor of Science in *Geographic Information Systems and Public Policy* degree.

To successfully advocate for policy change, prospectively design new policy, implement and administer government programs, and retrospectively evaluate the effects of policy, it is frequently necessary to understand where policy change is needed and where policy change has effects. For example, we might want to know how the spatial distribution of environmental degradation is related to the income of nearby residents. During the COVID-19 pandemic, it was crucial to know where the virus was spreading to wisely allocate scarce public resources. Similarly, with the growth in wildfire danger in California, having accurate maps of risk allows cities to wisely plan development and respond in real-time to disasters. Such examples are endless.

I have reviewed the proposed course offerings and structure and believe it to be sound. Despite the need for policy analysts and public servants to understand the spatial dimensions of public policy, there are no programs in existence (to the best of my knowledge) that formally combine training in GIS and public policy. This unique program is thus innovative and cutting-edge. Students completing this program will be well positioned to be employed in local, state, and federal government positions that value an understanding of the spatial dimensions of public policy.

UCR's School of Public Policy appears to have sufficient resources and expertise to deliver this curriculum. I am aware that UCR has been a leader in the development of undergraduate training in public policy and developed the first bachelor's degree in public policy in the UC system. It is welcome to see this curricular leadership expand to this new, pioneering degree.

Sincerely,

David C. Wilson
Dean, Goldman School of Public Policy

University of California, Berkeley

UNIVERSITY OF OREGON | College of Arts and Sciences

Feb. 26, 2026

Dr. Mark Long
Dean & Professor
School of Public Policy
University of California at Riverside

Dear Dean Long:

I am writing to express my strong support for the establishment of a new undergraduate B.S. degree in Geographic Information Systems and Public Policy (GISPP) at the University of California, Riverside. My background is in GIS and spatial data science and I know first-hand the competitive advantage combining these skills with domain expertise can provide to undergraduates. While I was chair of the Department of Geography and the Environment at UT-Austin we developed a certificate in geospatial AI that emphasized applications across a wide range of disciplines including transportation, engineering, planning, psychology, and ecology. I recently started a new position in the Geography Department at the University of Oregon where a relatively new major in spatial data science has seen impressive growth, often combined with majors in social or environmental science.

The geospatial industry is experiencing substantial growth, with global market projections estimating it will reach over $25 billion by 2030, driven by advancements in geospatial technologies, artificial intelligence, and big data analytics. The U.S. Department of Labor identifies geospatial technology as a high-growth industry, with demand spanning government agencies, environmental organizations, healthcare systems, and tech firms. Job prospects for graduates with geospatial analysis expertise are expanding rapidly, with opportunities in urban planning, transportation, epidemiology, business intelligence, and environmental science, among others.

The integration of GIS/spatial data science into policy-making is increasingly vital, as these tools provide critical insights into urban planning, environmental sustainability, healthcare accessibility, disaster response, and numerous other fields. By incorporating hands-on training with geospatial software, spatial modeling techniques, and policy applications, this program would produce graduates who are not only well-versed in geospatial technology but also capable of leveraging these tools to address real-world challenges. Further, I would expect that the unicity of this degree would provide ample recruitment opportunities for UCR.

The University of California, Riverside has a long-standing reputation for academic excellence and innovation and the faculty and resources in the School of Public Policy and Center for Geospatial Sciences would provide excellent support for this major. UCR would further

Department of Geography
1251 University of Oregon, Eugene OR 97403-1251
541-346-4555 | FAX 541-346-2067 geography.uoregon.edu

enhance its commitment to interdisciplinary education and workforce readiness, ensuring its students are equipped for the evolving demands of the 21st-century job market.

I strongly urge the committee to approve this proposal and support the development of this important academic initiative.

Sincerely,

Jennifer A. Miller, Professor of Spatial Data Science

Department of Geography

University of Oregon