

BOARD OF FORESTRY AND FIRE PROTECTION

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Staff Memo
Update on Joint Institute Program Development
 January 23, 2019

- The Joint Institute for Wood Products Innovation (Institute) implementation team first met November 20, 2018.
- Over the course of five meetings, a Scope of Work has been developed for \$250,000 to be encumbered before July 1, 2019. A flow chart showing the evolution of the Institute accompanies the Scope of Work.
- Staff recommends that the Board approve this Scope of Work, which will provide Cal Poly and UC Berkeley with \$125,000 each to be used by the two institutions to cooperatively complete four outlined tasks: conduct a forest product literature review and research gap analysis, evaluate possible strategic partnerships with external stakeholders, and formulate near-term priorities. The project deadline is December 31, 2019.
- The Institute implementation team plans to have nominations for Institute Advisory Council members for Board consideration at the March 6th meeting.
- A draft Charter has been developed for the Institute. Once the Institute and Advisory Council members are in place, the draft charter will be updated and finalized for Board approval.
- Background: The Forest Carbon Plan and Executive Order B-52-18 call for system-wide changes in forest management and wood product innovation. In response, the Forest Carbon Plan Implementation Budget Change Proposal outlines a total investment of \$96 million to: (1) increase pace and scale of forest management and restoration efforts, (2) build local capacity and strengthen regional collaborations, and (3) innovate and increase economies around the use of materials from forest health projects. The Joint Institute for Wood Products Innovation is being established under item 3. Funds for the Institute will be made available through the Timber Regulation and Forest Restoration Fund (TRFRF).

Allocated Funds:

Fiscal Year	Funds Available	Fund Encumbrance Deadline	Date Funds Expire
2018/19	\$250,000	6/30/19	6/30/21
2019/20	\$400,000	6/30/20	6/30/22
2020/21	\$260,000	6/30/21	6/30/23
2021/22	\$460,000	6/30/22	6/30/24
2022/23	\$460,000	6/30/23	6/30/25
2023/24	\$460,000	6/30/24	6/30/26

Scope of Work

Project Name: Joint Institute for Wood Products Innovation—Evaluation of Literature, Research Gaps, Partnerships, and Priorities

Detailed description of work to be performed and duties of all parties. Explanation and authorization for contracting these services. Specifically include the following:

- **Specifications and requirements. What is being done, by whom, where, why, how, etc.**

Background and Justification

California's 33 million acres of forestland is the largest land-based carbon sink in the State, with trees, shrubs, meadows, and forest soils sequestering carbon from the atmosphere. Decades of fire exclusion/suppression compounded by rising average temperatures and reduced precipitation have dramatically increased the size and intensity of California wildfires and bark beetle infestations, threatening the ability of forests to capture and clean water, serve as long-term carbon sinks, and support native biodiversity. To reverse these trends, system-wide changes in forest management and forest product innovation are imperative. To achieve desired goals, the State must increase the pace and scale of forest management and restoration efforts, build local capacity and strengthen regional collaboration, support forest product innovation, and promote the use of forest products.

Core challenges facing forest management activities include the lack of an economically sustainable demand for smaller diameter trees; trees killed by fire, insects, and/or disease; and woody biomass removed during forest management activities. A lack of demand for this material can result in sub-optimal management of forestlands and biomass to uses that are less economically, socially, or environmentally beneficial than desired.

The Institute will initiate forest product innovation research projects and support an expanded forest products sector in California through the following four tasks:

- Evaluate forest product innovation literature – Numerous reports have identified the potential for forest product innovation to enhance forest management in California, including barriers to achieving this potential. The Institute and associated researchers will perform a literature review and, where beneficial, consult with external stakeholders and Advisory Council members. Findings will be summarized in a written report.
- Identify research gaps - Forest product innovation can span numerous sectors of the economy, involving myriad producers, consumers, and processes. Based on literature review results, the Institute and associated researchers will identify promising areas for forest product innovation that are not currently represented in existing literature, alongside promising areas that have not yet been examined in the context of California forests. Where beneficial, expert elicitation will be conducted. Identified gaps will be summarized in a written report.

- Evaluate partnerships with candidate external stakeholders - The Institute and associated researchers will identify potential strategic partnerships with external stakeholders and service providers. Based on research and interviews, recommendations regarding strategic partnerships and appropriate means of engagement for each will be summarized in a written report. Preliminary candidates identified include:
 - USDA Forest Products Laboratory
 - Oregon Wood Innovation Center
 - National Center for Advanced Wood Products Manufacturing and Design
 - Washington State University School of Design and Construction
 - University of British Columbia. Center for Advanced Wood Processing
 - Oregon Forest Resources Institute
 - WoodWorks/Wood Products Council
 - U.S. Green Building Council
 - The Nature Conservancy

- Formulate near-term priorities for the Institute - Based on results from the literature review, research gap analysis, and strategic partnership analysis, the Institute and associated researchers will produce a report summarizing near-term priorities. These priorities will be shared with the Advisory Council and further refined for presentation to the Board of Forestry and Fire Protection (Board). Once approved by the Board, refined priorities will inform the ongoing operation of the Institute and support the expansion of the forest products sector in California.

➤ **What is being paid for, what determines the costs? Are there any outside cost factors? What are they?**

This agreement will utilize \$250,000 to evaluate forest product innovation literature, identify research gaps, evaluate partnerships with candidate external stakeholders, and formulate recommended near-term priorities for the Institute. Project findings will inform ongoing operation of the Institute and support an expanded forest products sector in California.

Costs associated with this agreement include personnel time and travel to and from interviews and locations with resources that will assist with research regarding each of the four outlined tasks. Costs also include producing the final written report addressing the 4 tasks outlined in this scope of work.

➤ **Personnel. What type and how many staff are to be utilized? What specific licenses, certifications, etc. are required?**

Cal Poly and UC Berkeley will be the primary academic institutions with whom the Board will contract for this agreement. This will require 1 PI at each institution to supervise research and provide leadership for the Institute.

One researcher from UC Berkeley College of Natural Resources and one from Cal Poly San Luis Obispo Wildland Urban Interface Fire Institute will research and report out on findings for 4 tasks called out in the scope of work. Those conducting the research should have experience with forest product utilization-related issues.

➤ **Coordination responsibilities. Who is doing what and who is responsible for what? (For both CAL FIRE and any prospective vendor.**

Board staff will oversee and support this agreement, assuring all Board responsibilities and requirements are met and that Cal Poly and UC Berkeley receive payments and are assisted when in need of agreement support.

Cal Poly and UC Berkeley will meet all requirements and timelines set forth in this agreement.

➤ **What are the deliverables? Any reports required? What result is sought by contracting this service?**

Deliverables for this agreement include a written report addressing the findings for each of the 4 tasks outlined, including:

- A review of forest product innovation literature, including any associated barriers;
- Gaps in forest product innovation research as well as those areas that have yet to be examined in the context of California forests;
- Potential strategic partnerships with external stakeholders and how best to engage each; and
- Recommendations for near-term priorities to inform the ongoing operation of the Institute and support the expansion of the forest products sector in California.

➤ **How did you determine that these services cannot be performed within state service resources? Whom have you contacted?**

Budget language associated with this agreement (2018-19 Forest Carbon Plan Implementation) requires that the Board partner with UC, CSU, or other academic institutions to accomplish Institute work. Cal Poly and UC Berkeley are State service resources.

Cal Poly was chosen as an academic institution partner due to their Wildland Urban Interface Fire Institute. The Cal Poly Wildland Urban Interface Fire Institute is uniquely qualified due to their expertise in multiple areas of study that impact the Institute, such as forestry and fire ecology, city and regional planning, construction management, landscape architecture, economics and fire protection engineering.

UC Berkeley was chosen as an academic institution partner due to their Department of Environmental Science, Policy, and Management (ESPM). ESPM is uniquely qualified ,

housing the Academic Divisions of Ecosystems Sciences, Organisms and Environment, and Society and Environment.

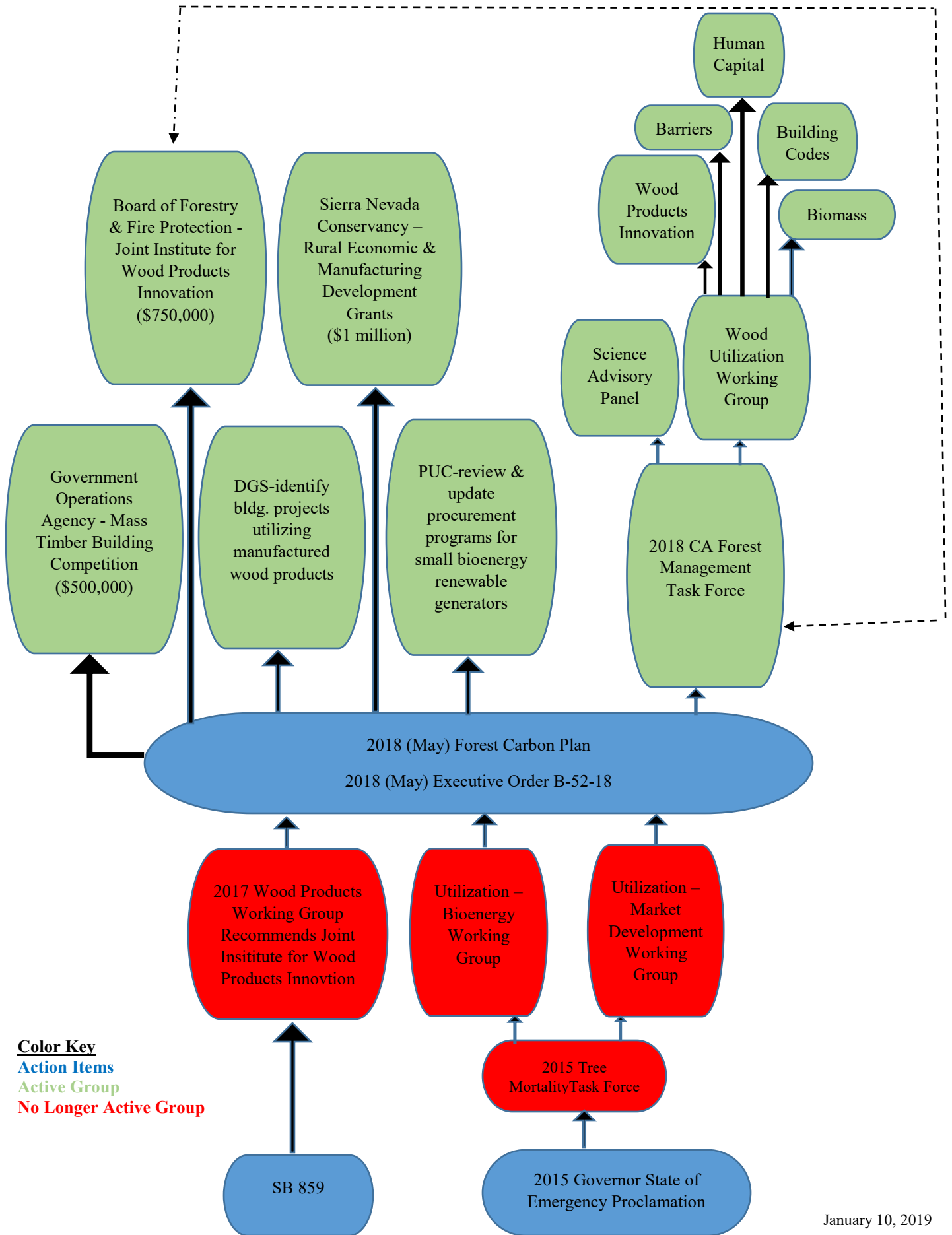
➤ **Timelines. What is to be done by when? Be specific. Are progress reports needed?**

This research is to begin no later than July 1, 2019. A completed comprehensive report is due to the Institute by 12/31/19. A brief progress report coordinated between Cal Poly and UC Berkeley is due to Board staff for dissemination to the Institute by the first of each month over the course of the agreement.

➤ **Evaluation. How will the contractor be evaluated and performance accepted?**

Evaluation will be based on the required report being delivered by 12/31/19, with findings for all 4 tasks addressed as outlined in the agreement.

Joint Institute for Wood Products Innovation Flow Chart



Color Key
 Action Items
 Active Group
 No Longer Active Group

California Joint Institute for Wood Products Innovation

DRAFT CHARTER

The California Board of Forestry and Fire Protection (Board) establishes the California Joint Institute for Wood Products Innovation (Institute) pursuant to Executive Order B-52-18. The Board may amend this charter at any of their regularly noticed meetings.

Purpose

The purpose of the Institute is to provide information, research, and analysis to support retention and expansion of the forest products sector in California in a manner that increases economic drivers supporting healthy forests. The work of the Institute will support long-term ecological and economic sustainability; increase forest resilience, long-term carbon storage, and local economies; and serve as a center for analysis, testing, and outreach to support industry retention and development in California.

Leadership

Institute leadership will consist of representatives from UC, CSU, other academic institutions, and the Board. Initiating membership will include a representative from each of the following: UC Berkeley College of Natural Resources, Cal Poly San Luis Obispo Wildland Urban Interface Fire Institute, UCANR Extension, the Board, and Board staff. As a member of the Institute leadership, the Board member shall not be acting in his or her official capacity as a representative of the Board. Institute leadership may elect to add or release members (except the Board representative and Board staff) in consultation with the Board.

Advisory Council

The Advisory Council (Council) shall consist of eight members appointed by the Board plus Board staff. One of the eight Board appointments shall be a member of the Institute. The Council shall reflect a diversity of perspectives and expertise, which may include forest products, forest management, environmental conservation, finance/investment, forested communities, rural economic development, tribal interests, and other areas as determined by the Board. Council members shall serve 2-year terms without term limits, subject to reappointment by the Board. The Board may elect to change Council representation or membership numbers as needed. The Council shall report to the Board and the Institute. The Council shall be subject to the Bagley-Keene Open Meeting Act (Bagley-Keene).

Board staff shall be responsible for the day-to-day operation and management of the Council. In accordance with Bagley-Keene, Council meetings will be public and shall be publicly noticed at least 10 days in advance of a meeting. The Council shall meet no less than four times per year and may meet in person, by teleconference, or via webinar. Council advice shall be submitted to the Institute.

Governance

The Board shall oversee all activities of the Institute and Council. Institute reports may be provided to the Forest Management Task Force or a successor entity when appropriate. The

Board shall assure that all activities are of an applied nature and reasonably related to real world challenges and opportunities related to increasing forest resilience.

Institute leadership and Board staff shall be responsible for Institute operation and management and its activities pursuant to contracts and grants. The Institute flow chart provides the organizational structure for the Institute in the context of other mandates, entities, and efforts and can be referenced as Appendix A of this charter. All products and supporting resources developed under contract with the Board or sub-contracted through the Institute shall be publicly accessible, including, but not limited to, data, software, reports, and analytical tools. The Institute shall meet as needed and will report to the Board as necessary. The Institute may, with input from the Board and Council, hold open forum meetings to help achieve its purpose.

The Institute shall consult with the Council on the development of all projects. The Institute will share project findings with the Council and Board as well as solicit advice on next steps. The Institute shall provide information, research, and analysis to the Board related to the expansion of the forest products sector for use by the Board when developing new contracts for wood products innovation.

The Council may provide guidance and direction in setting Institute priorities. This may include assessing results, identifying new opportunities, and any other areas deemed necessary by the Council, Institute, or Board to assist with successful retention and expansion of California's forest products sector.

Goals

The Institute may:

- Align California academic centers across disciplines to perform the activities of the Institute (in collaboration with pertinent federal, state, and local organizations as well as NGOs, tribes, industry, and other areas of expertise), including, but not limited to:
 - market research, development, and testing;
 - promotion of business innovation; and
 - research, development, and adoption of new opportunities, including forestry, wood engineering and nanotechnology, business administration, marketing, architectural design, and forestry workforce development.
- Align activities to contribute to long-term sustainability, forest health, carbon storage, and renewable materials.
- Prioritize development of innovations that enable near-term removal and utilization of hazardous fuels and tree thinning from California's forested lands.
- Serve as a center for innovative forest products research and development, analysis, and outreach for California.
- Facilitate science-based dialogue regarding the environmental, economic, and social tradeoffs that accompany forest product utilization scenarios.
- Organize California-based experts on a full range of wood and forest biomass utilization options via a "virtual hub."
- Partner with existing wood innovation centers and service providers to leverage limited funds and expertise.

- Identify and fill gaps in knowledge relevant to ongoing efforts and the goal of utilizing more California-grown wood in the State's future construction projects.

Activities

The Institute may engage in these and other activities necessary to support expanded utilization of forest materials to achieve sustainable forest management in California. Institute members may also engage in related activities during their normal academic activities. Only activities performed under Institute-related contracts or under the name of the Institute shall be subject to this charter.

Institute members shall prioritize the following activities:

- Review existing analyses of barriers and opportunities to forest product expansion, including reports produced for the Tree Mortality Task Force, the work of the Barriers sub-work group of the Wood Utilization Work Group, and reports to the US Forest Service.
- Identify gaps in knowledge and understanding and meet with various stakeholders to fill gaps and identify market opportunities of interest to those actively pursuing market expansions. This may include, but is not limited to, local governments, investors, NGOs, and tribes.
- Coordinate applied research projects responsive to the recommendations of the wood utilization working group and/or Council.

Institute members shall also:

- Conduct market research to identify existing and emerging wood products, including, but not limited to, forestry, wood engineering, biomass, and nanotechnology.
- Share market research findings with the Council and others interested in expanding innovative wood product markets to solicit advice on prioritizing new opportunities for further research.
- Conduct research and develop strategies to reduce barriers to the development of innovative wood products in California, identify near-term opportunities for such development, and communicate findings to audiences interested in implementing priority opportunities.
- Identify new technologies to improve the economic viability of sustainable forest management practices and ecosystem restoration.
- Survey and/or conduct meta-analysis of potential market sizes for innovative wood products in California, the Pacific Northwest, and overseas with sufficient scale and timelines that will offer substantive assistance to reduce hazardous fuels and improve forest health in California.
- Provide education and outreach to affected entities, interested parties, the public, media, and policy makers on work of the Institute as well as forest products and innovative wood products
- Initiate local, state, and federal policy design for wood innovation and expanded utilization of forest biomass.

Funding

The Board will allocate available funds annually to the Institute for ongoing staff, grants, grant management, university consulting, and other approved expenditures. Funding levels will vary from year to year. Board and Institute members will work to bring in additional resources to support Institute efforts as needed.