

**PLACER COUNTY
OFFICE OF EMERGENCY SERVICES**

MEMORANDUM

TO: Honorable Board of Supervisors

FROM: Thomas M. Miller, County Executive Officer
by Brett Storey, Senior Management Analyst 

DATE: October 20, 2008

SUBJECT: **Authorize the Chairman of the Board of Supervisors to Sign a Contract with TSS Consultants in an Amount Not to Exceed \$272,213 to Support the Placer County Biomass Utilization Pilot Project**

ACTION REQUESTED

Authorize the Chairman of the Board of Supervisors to sign a contract not to exceed \$272,213 with TSS Consultants to support the congressionally directed Department of Energy (DOE) grant entitled "Placer County Biomass Utilization Pilot Project."

BACKGROUND

At the direction of your Board, staff has created a plan to investigate building a biomass to energy facility via a DOE Grant. A team of technical consultants consisting of TSS, The Placer County Air Pollution Control District (PCAPCD), Steve Eubanks, Proactive Customer Services and Advanced Energy Strategies is proposed to complete the majority of the analyses regarding this grant. TSS, Inc. has been providing valuable technical services regarding biomass utilization projects to the County for the past few years. TSS has been our Forestry Technical Consultant as a part of our Biomass Policy Team and has recently completed our technical feasibility study for a biomass facility in the Tahoe Basin funded jointly by the USFS and the county. Their staff has extensive experience (see attached statement of qualifications) in developing and analyzing these types of projects.

The amount of funding and rates of TSS has been negotiated with the DOE and they are considered qualified and approved. As such, TSS has been determined by our Procurement department to be the only contractor that can support this effort in the capacity listed below. The recommendation is that TSS continues to assist the County by providing technical support for the Biomass Utilization Pilot Project in the following tasks:

- Overall Project management and reporting to the DOE
- Leading the air/water emissions and carbon credit/emissions offsets study
- Developing a business plan
- Leading the tasks for the energy economics analysis
- Leading the tasks for the biomass to energy technical requirements statement of work and requests for proposals (RFP) process development plan
- Assisting PCAPCD in developing the new source review permit analysis
- Leading the tasks for the woody biomass fuel source analysis
- Leading the tasks for the communications plan and guidebook
- Other activities as determined by County in support of the Project

FISCAL IMPACT

The not to exceed amount of the contract is \$272,213 and is reimbursable from the DOE Grant entitled "Placer County Biomass Utilization Pilot Project" and is currently budgeted.

Attachments

TSS Contract for these services
TSS Statement of Qualifications

Administering Agency: Placer County Executive Office

Contract No. _____

Contract Description: PROFESSIONAL SERVICES OF TSS CONSULTANTS FOR DOE
PLACER COUNTY BIOMASS UTILIZATION PILOT PROJECT

CONSULTANT SERVICES AGREEMENT

THIS AGREEMENT is made at Auburn, California, as of November 1, 2008, by and between the County of Placer, ("County"), and TSS Consultants ("Contractor"), who agree as follows:

1. **Services.** Subject to the terms and conditions set forth in this Agreement, Contractor shall provide the services described in **Exhibit A**. Contractor shall provide said services at the time, place, and in the manner specified in **Exhibit A**.
2. **Payment.** County shall pay Consultant for services rendered pursuant to this Agreement at the time and in the amount set forth in **Exhibit B**. The payment specified in **Exhibit B** shall be the only payment made to Consultant for services rendered pursuant to this Agreement. Consultant shall submit all billings for said services to County in the manner specified in **Exhibit B**; or, if no manner be specified in **Exhibit B**, then according to the usual and customary procedures which Consultant uses for billing clients similar to County. **The amount of the contract shall not exceed Two Hundred Seventy Two Thousand Two Hundred Thirteen (\$272,213.00).**
3. **Facilities, Equipment and Other Materials, and Obligations of County.** Unless otherwise specified in **Exhibit C**, Contractor shall, at its sole cost and expense, furnish all facilities, equipment, and other materials which may be required for furnishing services pursuant to this Agreement.
4. **Exhibits.** All exhibits referred to herein will be attached hereto and by this reference incorporated herein.
5. **Time for Performance.** Time is of the essence. Failure of Contractor to perform any services within the time limits set forth in **Exhibit A** shall constitute material breach of this contract.
6. **Independent Contractor.** At all times during the term of this Agreement, Contractor shall be an independent Contractor and shall not be an employee of the County. County shall have the right to control Contractor only insofar as the results of Contractor's services rendered pursuant to this Agreement. County shall not have the right to control the means by which Contractor accomplishes services rendered pursuant to this Agreement.
7. **Licenses, Permits, Etc.** Contractor represents and warrants to County that it has all licenses, permits, qualifications, and approvals of whatsoever nature, which are legally required for Contractor to practice its profession. Contractor represents and warrants to County that Contractor shall, at its sole cost and expense, keep in effect or obtain at all times during the term of this Agreement, any licenses, permits, and approvals which are legally required for Contractor to practice its profession at the time the services are performed.
8. **Time.** Contractor shall devote such time to the performance of services pursuant to this Agreement as may be reasonably necessary for the satisfactory performance of Contractor's obligations pursuant to this Agreement. Neither party shall be considered in default of this Agreement to the extent

performance is prevented or delayed by any cause, present or future, which is beyond the reasonable control of the party.

9. **Hold Harmless And Indemnification Agreement.** At all times during the performance of this agreement, Contractor agrees to protect, defend, and indemnify County in accordance with the provisions contained in Exhibit D.
10. **Insurance.** Contractor shall file with County concurrently herewith a Certificate of Insurance, in companies acceptable to County, with a Best's Rating of no less than A:VII, for the coverage shown in Exhibit D. All costs of complying with these insurance requirements shall be included in Contractor's fee(s). These costs shall not be considered a "reimbursable" expense under any circumstances.
11. **Contractor Not Agent.** Except as County may specify in writing Contractor shall have no authority, express or implied, to act on behalf of County in any capacity whatsoever as an agent. Contractor shall have no authority, express or implied pursuant to this Agreement to Bind County to any obligation whatsoever.
12. **Assignment Prohibited.** Contractor may assign its rights and obligations under this Agreement only upon the prior written approval of County, said approval to be in the sole discretion of County.
13. **Personnel.**
 - A. Contractor shall assign only competent personnel to perform services pursuant to this Agreement. In the event that County, in its sole discretion, at any time during the term of this Agreement, desires the removal of any person or persons assigned by Contractor to perform services pursuant to this Agreement, including those members of the Project Team as explained below, Contractor shall remove any such person immediately upon receiving notice from County of the desire of County for removal of such person or persons.
 - B. Notwithstanding the foregoing, if specific persons are designated as the "Project Team" in Exhibit A, Contractor agrees to perform the work under this agreement with those individuals identified. Reassignment or substitution of individuals or subcontractors named in the Project Team by Contractor without the prior written consent of County shall be grounds for cancellation of the agreement by County, and payment shall be made pursuant to Section 15 (Termination) of this Agreement only for that work performed by Project Team members.
14. **Standard of Performance.** Contractor shall perform all services required pursuant to this Agreement in the manner and according to the standards observed by a competent practitioner of the profession in which Contractor is engaged in the geographical area in which Contractor practices its profession. All products of whatsoever nature which Contractor delivers to County pursuant to this Agreement shall be prepared in a substantial first class and workmanlike manner and conform to the standards or quality normally observed by a person practicing in Contractor's profession.
15. **Termination.**
 - A. County shall have the right to terminate this Agreement at any time by giving notice in writing of such termination to Contractor. In the event County shall give notice of termination, Contractor shall immediately cease rendering service upon receipt of such written notice, pursuant to this Agreement. In the event County shall terminate this Agreement:
 - 1) Contractor shall deliver copies of all writings prepared by it pursuant to this Agreement. The term "writings" shall be construed to mean and include: handwriting, typewriting, printing, Photostating, photographing, and every other means of recording

upon any tangible thing any form of communication or representation, including letters, words, pictures, sounds, or symbols, or combinations thereof.

- 2) County shall have full ownership and control of all such writings delivered by Contractor pursuant to this Agreement.
- 3) County shall pay Contractor the reasonable value of services rendered by Contractor to the date of termination pursuant to this Agreement not to exceed the amount documented by Contractor and approved by County as work accomplished to date; provided, however, that in no event shall any payment hereunder exceed the amount of the agreement specified in Exhibit B, and further provided, however, County shall not in any manner be liable for lost profits which might have been made by Contractor had Contractor completed the services required by this Agreement. In this regard, Contractor shall furnish to County such financial information as in the judgment of the County is necessary to determine the reasonable value of the services rendered by Contractor. The foregoing is cumulative and does not affect any right or remedy, which County may have in law or equity.

B. Contractor may terminate its services under this Agreement upon thirty- (30) working days' advance written notice to the County.

16. **Non-Discrimination**. Contractor shall not discriminate in its employment practices because of race, religious creed, color, national origin, ancestry, physical disability, mental disability, medical condition, marital status, sex, age, or sexual orientation in contravention of the California Fair Employment and Housing Act, Government Code section 12900 et seq.
17. **Records**. Contractor shall maintain, at all times, complete detailed records with regard to work performed under this agreement in a form acceptable to County, and County shall have the right to inspect such records at any reasonable time. Notwithstanding any other terms of this agreement, no payments shall be made to Contractor until County is satisfied that work of such value has been rendered pursuant to this agreement. However, County shall not unreasonably withhold payment and, if a dispute exists, the withheld payment shall be proportional only to the item in dispute.
18. **Ownership of Information**. All professional and technical information developed under this Agreement and all work sheets, reports, and related data shall become the property of County, and Contractor agrees to deliver reproducible copies of such documents to County on completion of the services hereunder. The County agrees to indemnify and hold Contractor harmless from any claim arising out of reuse of the information for other than this project.
19. **Waiver**. One or more waivers by one party of any major or minor breach or default of any provision, term, condition, or covenant of this Agreement shall not operate as a waiver of any subsequent breach or default by the other party.
20. **Conflict of Interest**. Contractor certifies that no official or employee of the County, nor any business entity in which an official of the County has an interest, has been employed or retained to solicit or aid in the procuring of this agreement. In addition, Contractor agrees that no such person will be employed in the performance of this agreement without immediately notifying the County.
21. **Entirety of Agreement**. This Agreement contains the entire agreement of County and Contractor with respect to the subject matter hereof, and no other agreement, statement, or promise made by any party, or to any employee, officer or agent of any party, which is not contained in this Agreement, shall be binding or valid.

22. **Alteration.** No waiver, alteration, modification, or termination of this Agreement shall be valid unless made in writing and signed by all parties, except as expressly provided in Section 15, Termination.
23. **Governing Law.** This Agreement is executed and intended to be performed in the State of California, and the laws of that State shall govern its interpretation and effect. Any legal proceedings on this agreement shall be brought under the jurisdiction of the Superior Court of the County of Placer, State of California, and Contractor hereby expressly waives those provisions in California Code of Civil Procedure §394 that may have allowed it to transfer venue to another jurisdiction.
24. **Notification.** Any notice or demand desired or required to be given hereunder shall be in writing and deemed given when personally delivered or deposited in the mail, postage prepaid, and addressed to the parties as follows:

COUNTY OF PLACER:

Placer County Executive Office
Attn: Brett Storey
2968 Richardson Dr
Auburn, CA 95603

Phone: (530) 886-5334
Fax: (530) 886-5343

CONSULTANT:

TSS
Attn: Tad Mason
2724 Kilgore Road
Rancho Cordova, CA 95670

Phone: (916) 638-8811 ex 112
Fax: (916) 638-9326

Any notice so delivered personally shall be deemed to be received on the date of delivery, and any notice mailed shall be deemed to be received five (5) days after the date on which it was mailed.

Executed as of the day first above stated:

COUNTY OF PLACER

By: _____

Printed Name/Title: Jim Holmes, Chairman of the Board of Supervisors

Approved As to Form – County Counsel:

By: _____

TSS CONSULTANTS - *

By: _____

Name: Tad Mason

Title: Managing Partner/CEO

By: _____

Name: Frederick Tornatore

Title: Secretary/Vice President

**If Consultant is a corporation, this agreement must be signed by two corporate officers, one of which must be the secretary of the corporation, and the other may be either the President or Vice President, unless an authenticated corporate resolution is attached delegating authority to a single officer or other officers to bind the corporation.*

Exhibits

- A. Scope of Work
- B. Payment for Services Rendered

EXHIBIT A

**SCOPE OF SERVICES
COUNTY OF PLACER
AND
TSS CONSULTANTS FOR
DOE PLACER COUNTY BIOMASS UTILIZATION PILOT PROJECT**

As directed by the County Executive Officer, or his designee, perform the following tasks and duties, November 1, 2008, as identified below.

Contractor agrees to do the following in conjunction with the Placer County Biomass Manager for DOE award # DE-FG36-08GO88026 "Placer County Biomass Utilization Pilot Project":

- 1) Assist in the overall Project management and reporting to the DOE.
- 2) Assist County in leading the tasks to determine air/water emissions and carbon credit/emissions offsets study. Prepare Draft study results.
- 3) Assist County in developing a business plan. Prepare Draft business plan.
- 4) Assist County in leading the tasks for the energy economics analysis. Prepare Draft energy economics analysis results.
- 5) Assist the County in leading the tasks for the biomass to energy technical requirements SOW and prepare RFP process development plan.
- 6) Assist County and County Air Pollution Control District in developing the new source review permit analysis.
- 7) Assist County in analyzing the Logistics study tasking.
- 8) Assist County in leading the tasks for the woody biomass fuel source analysis. Prepare Draft woody biomass fuel source analysis.
- 9) Assist County in leading the tasks for the communications plan and guidebook. Prepare Draft communications plan and guidebook
- 10) Other activities as determined by County in support of the Project.

TSS Charge out Hourly Rates

| <u>Description</u> | <u>Rate</u> |
|---------------------------|------------------------|
| Senior Consultant | \$147/hour (2008/2009) |
| Senior Consultant | \$157/hour (2009/2010) |

EXHIBIT B

**PAYMENT FOR SERVICES RENDERED
COUNTY OF PLACER
AND
TSS CONSULTANTS FOR
DOE PLACER COUNTY BIOMASS UTILIZATION PILOT PROJECT**

1. AMOUNT OF PAYMENT. COUNTY shall pay CONTRACTOR not to exceed a contract total amount of **Two Hundred Seventy Two Thousand Two Hundred Thirteen** (\$272,213.00) during the term of this agreement as payment for all services set forth in Exhibit A, which includes payment in full for any reasonable out-of-pocket costs and expenses.
2. PAYMENT SCHEDULE. Monthly payments shall be made to CONTRACTOR within ten (10) days of the last day of each month for services set forth in Exhibit A. Payment shall be made each month as documented, as payment in full for all services set forth in Exhibit A, which includes payment in full for any reasonable out-of-pocket costs and expenses. CONTRACTOR shall invoice COUNTY for services set forth in Exhibit A on a monthly basis (if work has been authorized and performed), by the 15th of each month.

EXHIBIT D

HOLD HARMLESS AGREEMENT AND INSURANCE REQUIREMENTS

1. HOLD HARMLESS AND INDEMNIFICATION AGREEMENT

The CONSULTANT hereby agrees to protect, defend, indemnify, and hold PLACER COUNTY free and harmless from any and all losses, claims, liens, demands and causes of action of every kind and character including, but not limited to, the amounts of judgments, penalties, interest, court costs, legal fees, and all other expenses incurred by PLACER County arising in favor of any party, including claims, liens, debts, personal injuries, death, or damages to property (including employees or property of the COUNTY) and without limitation by enumeration, all other claims or demands of every character occurring or in any way incident to, in connection with or arising directly or indirectly out of the contract or agreement to the extent that the above are caused by negligent acts, errors, omissions, or willful misconduct of the CONSULTANT.

CONSULTANT'S obligation shall include the duty to defend PLACER COUNTY as set forth in California Civil Code, Section 2778 and 2782.5 This provision is not intended to create any cause of action in favor of any third party against CONSULTANT or the COUNTY or to enlarge in any way the CONSULTANT'S liability but is intended solely to provide for indemnification of PLACER COUNTY from liability for damages or injuries to third persons or property arising from CONSULTANT'S performance pursuant to this contract or agreement.

As used above, the term PLACER COUNTY means Placer County, its officers, agents, employees, and volunteers.

2. INSURANCE:

CONSULTANT shall file with COUNTY concurrently herewith a Certificate of Insurance, in companies acceptable to COUNTY, with a Best's Rating of no less than A:VII showing.

3. WORKER'S COMPENSATION AND EMPLOYERS LIABILITY INSURANCE:

Worker's Compensation Insurance shall be provided as required by any applicable law or regulation. Employer's liability insurance shall be provided in amounts not less than one million dollars (\$1,000,000) each accident for bodily injury by accident, one million dollars (\$1,000,000) policy limit for bodily injury by disease, and one million dollars (\$1,000,000) each employee for bodily injury by disease.

If there is an exposure of injury to CONSULTANT'S employees under the U.S. Longshoremen's and Harbor Worker's Compensation Act, the Jones Act, or under laws, regulations, or statutes applicable to maritime employees, coverage shall be included for such injuries or claims.

Each Worker's Compensation policy shall be endorsed with the following specific language:

Cancellation Notice - "This policy shall not be canceled or materially changed without first giving thirty (30) days prior written notice to the County of Placer."

CONTRACTOR shall require all SUBCONTRACTORS to maintain adequate Workers' Compensation insurance. Certificates of Workers' Compensation shall be filed forthwith with the County upon demand.

4. GENERAL LIABILITY INSURANCE:

A. Comprehensive General Liability or Commercial General Liability insurance covering all operations by or on behalf of CONSULTANT, providing insurance for bodily injury liability and property damage liability for the limits of liability indicated below and including coverage for:

- (1) Contractual liability insuring the obligations assumed by CONSULTANT in this Agreement.

- B. One of the following forms is required:
- (1) Comprehensive General Liability;
 - (2) Commercial General Liability (Occurrence); or
 - (3) Commercial General Liability (Claims Made).
- C. If CONSULTANT carries a Comprehensive General Liability policy, the limits of liability shall not be less than a Combined Single Limit for bodily injury, property damage, and Personal Injury Liability of:
- One million dollars (\$1,000,000) each occurrence
 - One million dollars (\$1,000,000) aggregate
- D. If CONSULTANT carries a Commercial General Liability (Occurrence) policy:
- (1) The limits of liability shall not be less than:
 - One million dollars (\$1,000,000) each occurrence (combined single limit for bodily injury and property damage)
 - One million dollars (\$1,000,000) for Products-Completed Operations
 - One million dollars (\$1,000,000) General Aggregate
 - (2) If the policy does not have an endorsement providing that the General Aggregate Limit applies separately, or if defense costs are included in the aggregate limits, then the required aggregate limits shall be two million dollars (\$2,000,000).
- E. Special Claims Made Policy Form Provisions:
- CONSULTANT shall not provide a Commercial General Liability (Claims Made) policy without the express prior written consent of COUNTY, which consent, if given, shall be subject to the following conditions:
- (1) The limits of liability shall not be less than:
 - One million dollars (\$1,000,000) each occurrence (combined single limit for bodily injury and property damage)
 - One million dollars (\$1,000,000) aggregate for Products Completed Operations
 - One million dollars (\$1,000,000) General Aggregate
 - (2) The insurance coverage provided by CONSULTANT shall contain language providing coverage up to six (6) months following the completion of the contract in order to provide insurance coverage for the hold harmless provisions herein if the policy is a claims-made policy.

5. ENDORSEMENTS:

Each Comprehensive or Commercial General Liability policy shall be endorsed with the following specific language:

- A. "The County of Placer, its officers, agents, employees, and volunteers are to be covered as insured for all liability arising out of the operations by or on behalf of the named insured in the performance of this Agreement."
- B. "The insurance provided by the Consultant, including any excess liability or umbrella form coverage, is primary coverage to the County of Placer with respect to any insurance or self-insurance programs maintained by the County of Placer and no insurance held or owned by the County of Placer shall be called upon to contribute to a loss."

- C. "This policy shall not be canceled or materially changed without first giving thirty (30) days' prior written notice to the County of Placer."

6. AUTOMOBILE LIABILITY INSURANCE:

Automobile Liability insurance covering bodily injury and property damage in an amount no less than one million dollars (\$1,000,000) combined single limit for each occurrence.

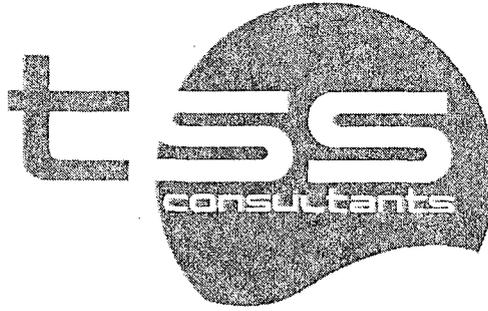
Covered vehicles should include owned, non-owned, and hired automobiles/trucks.

7. PROFESSIONAL LIABILITY INSURANCE (ERRORS & OMISSIONS):

Professional Liability Insurance for Errors and Omissions coverage in the amount of not less than one million dollars (\$1,000,000) combined single limit for each occurrence and two million dollars (\$2,000,000) aggregate.

If Consultant sub-contracts in support of Consultants work provided for in the agreement, Professional Liability Insurance for Errors shall be provided by the sub contractor in an amount not less than one million dollars (\$1,000,000) in aggregate.

The insurance coverage provided by the consultant shall contain language providing coverage up to six (6) months following completion of the contract in order to provide insurance coverage for the hold harmless provisions herein if the policy is a claims made policy.



TSS CONSULTANTS

STATEMENT OF QUALIFICATIONS

Key Staff and Associates

Selected Projects &

Company References

2724 Kilgore Road
Rancho Cordova, CA
www.tssconsultants.com

September 2008

About TSS Consultants

TSS is a consulting group providing renewable energy, natural resources management, environmental compliance, greenhouse gas management, and financial assessment services. Since TSS' establishment in 1986 the firm has provided technological and economic evaluation of new and proposed commercial scale energy projects, biomass resource utilization alternatives, and policy review focused on the dynamic and growing field of greenhouse gas management. The TSS team of has over 125 years of cumulative experience in renewable energy, forestry and wildfire management, wildland fuel mitigation, environmental and regulatory compliance, climate change mitigation and greenhouse gas management. TSS consistently advocates the use of sustainable biomass resources and appropriate technologies for creating electric power, process heating and cooling, and transportation fuels.

Active in the United States and internationally, TSS brings its public and private sector clients the tools necessary to develop feasibility assessments and technology evaluations for small and large scale renewable biomass energy facilities. TSS understands and focuses on the financial risk, environmental constraints and benefits (such as improving forest health), social and regulatory/permitting constraints and benefits (such as reducing greenhouse gases through the use of biomass) facing biomass energy development. TSS works to take a client from planning to on-the-ground construction to full operational status. With the current dynamic energy markets increasing the risk of long-term investments, TSS provides due diligence level investigation and long-term planning, providing clients the necessary information to understand and mitigate risk, along with the market considerations involved with their investment options.

Key Staff and Associates

Tad Mason, Chief Executive Officer

Tad Mason has 29 years of experience in renewable energy project development and wildland resources management. He joined TSS Consultants in 2000 and has been conducting biomass market and utilization feasibility assessments for a variety of private, tribal and public sector clients. As Chief Executive Officer, he is responsible for overseeing the day to day affairs of TSS Consultants. In addition, Mr. Mason manages projects ranging from renewable energy facility development, resource assessments, financial analysis, natural resource management and life cycle assessment.

As a biomass analyst, Mr. Mason has been responsible for biomass fuels procurement as well as biomass project assessment, development, and implementation. Prior to joining TSS, he served as Manager of Wood Fuel Supply for Pacific Energy/Pacific Wood Fuels Company where he coordinated biomass fuel procurement activities in support of four biomass-fired power plants in Northern California. As a California Registered Professional Forester (California RPF # 2156), he has prepared land management plans, focused on timber management, fuels treatment, and fire restoration.

Mr. Mason received his B.S. degree in Forestry from the University of California at Berkeley in 1979. He is an active member of the Northern California Society of American Foresters and the California Licensed Foresters Association. He has managed projects throughout North America for a diverse set of clients such as public resource management agencies, tribes, private sector enterprises, public utilities, private investment firms and community stakeholder groups.

Frederick Tornatore, Executive Vice President and Director of Environmental and Technology Services

Frederick Tornatore has over 30 years of professional experience in renewable energy development for both the private and public sectors. At TSS he directs the technical, environmental, and economic evaluations of a wide number of existing and emerging technologies that use many different forms of biomass (e.g., agricultural, forest, urban wood, municipal solid, animal wastes, and biosolids from wastewater treatment plants). The environmental evaluations have been primarily related to air emissions (both criteria pollutants and greenhouse gases), water consumption, and wastewater emissions. As the Director of Environmental and Technology Services for TSS, Mr. Tornatore is currently working on several biomass facility siting and permitting projects that include:

- Resource assessment for a proposed Colorado-based renewable energy center (emphasis on biopower and biofuels);
- Technology assessment and carbon market development for biomass-fired combined heat and power facility in the Sierra Nevada Mountains;

- Technology evaluation of both small and large scale Anaerobic Digesters for conversion of California regional food waste to methane gas for direct injection into utility gas pipeline and/or electrical generation;
- Permitting and facility siting analysis for a thermal gasification plant that uses a combination of forest biomass, municipal solid waste, and biosolids;
- A preliminary environmental impact assessment for a facility that uses anaerobic digestion of cattle manure (digester gas as fuel source to produce ethanol);
- Title V air permit for a biomass power plant on tribal land (permitted by U.S. EPA);
- A compliance guide for biomass power plant facility operators and protocols for the facility's emissions testing;
- An environmental analysis on the potential air and water impacts of biomass gasification systems (for a U.S. Department of Energy funded project). For this project, Mr. Tornatore is reviewing available emissions data that can be found in the public domain, as well as emissions data being generated by the subject systems. He has also conducted similar evaluations of reciprocating engines using syngas, as well as digester gas. Mr. Tornatore has recently prepared and implemented an emissions testing program for a new state-of-the-art biomass boiler;
- Compliance consulting on two of the three operating Municipal Solid Waste to Energy facilities in California. In this capacity, Mr. Tornatore reviewed facility operations and their effects on emissions.

In addition to the environmental evaluation of air and wastewater emissions from biomass utilization systems, and the siting of such systems, Mr. Tornatore has been involved with the facilitation of land use and community acceptance requirements for several biomass and renewable energy projects. Land use and community outreach and acceptance have been a paramount consideration in all of TSS's siting assessments. Mr. Tornatore also actively participates in the various TSS biomass fuels resource assessment studies.

Mr. Tornatore has a B.S. in Botany from the University of California at Berkeley, and he is a California Registered Environmental Assessor. He is the former Chairman of the Sacramento Environmental Commission, which advises the City Council of Sacramento and the Sacramento County Board of Supervisors on environmental-related matters in their respective jurisdictions. Mr. Tornatore also currently serves on the Executive Board of the California Biomass Collaborative.

Calvin Mukumoto, Chief Financial Officer

Cal Mukumoto has 28 years of forestry experience which includes providing strategic business planning, business viability assessments, capital budget analysis, marketing, interim management, contract negotiation, project management and turnaround management services. Currently, he is serving as project manager for the Warm Springs Biomass Energy project. He is responsible for all phases of biomass plant development including resource assessment and advancement.

Mr. Mukumoto is a member of the U.S. Board of Directors for the Forest Stewardship Council and is a member of the Oregon Board of Forestry. The Intertribal Timber Council has recognized him for his contribution to Indian Forestry through an award for outstanding service. He has also participated as a member of the Indian Forest Management Assessment Team (IFMAT), a congressionally mandated team to review the status of Native American forestry in the United States. In addition, he works with local and regional collaborative groups developing local solutions to hazardous forest fuels and forest restoration. He has also participated as an intern for the Nissho Iwai Corporation studying the Japanese log and lumber markets.

Mr. Mukumoto is a Certified Forester with the Society of American Foresters. He received his Bachelor of Science from Humboldt State University and his MBA from the University of Washington.

Todd Hansen, Resource Specialist

Todd T. Hansen has 30 years of experience as both a consultant and industrial forester. While working as an industrial forester he administered harvest activities, provided quality control, and designed and managed resource information systems including inventory, GIS, and growth & yield modeling. As a forestry consultant, Mr. Hansen provided services to the forest products industry, non-industrial forest landowners, public agencies, financial institutions and utility companies.

Mr. Hansen has performed resource assessments, resource information design and implementation, personnel training, forest management planning and implementation, forest resource marketing and harvest administration. He has also assisted in the development of integrated multi-resource management plans for utility companies' hydroelectric relicensing efforts. He has performed operational audits of industrial forest operations and conducted resource and environmental due diligence for international financial institutions and industrial clients. He has experience in financial analysis and planning for forestland acquisitions in domestic and international settings. His experience encompasses the Pacific Northwest, Inland Empire, Alaska, the Southeast and South America.

Mr. Hansen participated in the development of several Community Wildfire Protection Plans as industrial representative and developed harvest plans to incorporate hazardous fuel reduction in ownership adjacent to communities. Recent projects have included raw material supply assessments and financial modeling for forest products operations and biomass facilities.

Mr. Hansen received his B.S. degree in Forest Science from Humboldt State University. He is an active member of the Society of American Foresters and former member of the Board of Directors for Walker Range Forest Protection Association.

Christopher Clavin, Energy & Environment Analyst

Christopher Clavin is a Civil & Environmental Engineer by education and has industry and academic experience assessing the environmental impacts and issues surrounding infrastructure and renewable energy systems development. He has conducted environmental life-cycle assessments for various public and private entities ranging from environmental product assessment, development of personnel management programs, and assessing the environmental footprint of industrial activities. As an engineer, Mr. Clavin has had the opportunity to support design efforts for Gold & Silver LEED rated buildings with the goal of implementing sustainable development plans. He has provided private sector clients with water resources permit and regulatory compliance services along with civil engineering design support.

With TSS Consultants, Mr. Clavin extends these experiences to assess the environmental benefits and feasibility of biomass renewable energy technology. Within the context of advocating biomass utilization, Mr. Clavin conducts technology assessment investigations with a life-cycle assessment approach, natural resource and fuel assessment surveys, provides regulatory and permitting support, and advises on application of biomass technology to provide clients with economical solutions for their biomass-based renewable energy goals. Mr. Clavin has actively instructed on carbon market and protocol development, while engaging in policy review efforts to support the expansion of the biomass-based renewable energy as a sound financial instrument and large component of the solution to reduce greenhouse gas emissions.

Mr. Clavin received his M.S. in Engineering & Project Management with a certificate in the Engineering for Business and Sustainability program from the University of California, Berkeley and his B.S. in Civil & Environmental Engineering from the University of California, Berkeley. Mr. Clavin is professionally affiliated with the American Society of Civil Engineers.

William Delimont, Financial and Business Analyst

Mr. Delimont has managed businesses and industrial tree farms in the Pacific Northwest and Southeast United States. His experience ranges from senior management and operations to research and development. Most recently he worked in remote sensing, analysis, and sales; supplying tactical and strategic information to forest product manufacturers and suppliers. This work included traditional forest products raw material supply and Bio-energy supply. For three years he was a Contract Asset Manager for the world's largest TIMO. His work also includes initial planning and investigation for acquisition of tree farms in South America, consulting, surveying and nursery operations in the Pacific Northwest.

Mr. Delimont has participated in and led management teams that received awards for innovation and productivity. This included leadership and participation in organizational change for both a Fortune 500 forest products company and a large privately held West Coast firm. Mr. Delimont's work includes profit and loss responsibility for timberland operations in the southeast and northwest United States involving operations larger than 100,000 acres.

Master of Business Administration, Portland State University, Portland, Oregon.
Bachelor of Science, Forestry, Humboldt State University, Arcata, California.
Registered Professional Forester #2101 California

James Burk, Forest Engineer and Transportation Analyst

James Burk has conducted biomass fuel availability and quality studies including work in the United States, Canada, Central America and Europe. Mr. Burk has evaluated availability of urban, agricultural and forest biomass fuel supplies for alternatively-fueled power plants in California, Florida, Illinois, Indiana, Kentucky, Massachusetts, Michigan, Minnesota, Missouri, Ohio, Pennsylvania, Washington, West Virginia, and Wisconsin. He has also conducted wood chip quality control studies and evaluated alternative marketing opportunities for wood fiber utilization in the pulp and paper industry and for the use of lignocellulose for ethanol production.

Prior to teaming with TSS Consultants, Mr. Burk was the Fuel Resources Manager for Ultrapower Biomass Fuels Corporation in Auburn, California. He managed the first ocean-barged wood fuel program in California, procuring fuel from British Columbia and the Pacific Northwest. He developed logistical procedures for handling and hauling barged fuel, developed in-forest and urban wood fuel resources for four wood-fired power plants, and procured wood fuel for a 12 MW power plant.

Mr. Burk was the Resource Procurement Manager for California Woodfiber Corporation of West Sacramento, California (a joint venture between Diao Paper Company and Marubeni Trading Corporation). He managed log purchases for whole log chip mills and also negotiated outside sales of mill by-products such as bark, pin chips and sawlogs. He monitored quality of logs and residual chips, interfaced with suppliers to maintain export chip quality, investigated long-range resource procurement strategies including feasibility studies of timberland purchases, short rotation intensive forestry projects and pulp chip production and export opportunities in the southeastern United States. He traveled throughout Japan and gained first-hand understanding of pulp chip quality and supply considerations at Japanese pulp and paper operations.

Mr. Burk was a Development Engineer for the University of California, Davis, Department of Agricultural Engineering. He was project engineer on various research projects to investigate improvements in the planting and harvesting of biomass and timber products. In addition, he assisted with the development of new methods for harvesting and handling biomass for fuel and fiber and with instruction in engineering courses and graduate student research work.

Mr. Burk received his B.S. degree in Agricultural and Forest Engineering from the University of California at Davis in 1979. He is an active member of the American Society of Agricultural Engineers and the Northern California Society of American Foresters.

Selected Biomass Assessment and Utilization Projects

TSS provides essential, professional expertise for renewable energy projects, specifically those involving biomass, geothermal, and solar energy. Our services include feasibility studies, economic and environmental risk assessments, raw material procurement, market contract negotiations, permitting and siting of proposed facilities, and evaluation of emerging renewable energy technologies. Our renewable energy consulting services have been used by a variety of clients including investors (for the purchase or refinancing of facilities), developers, owners, operators, tribes, and public agencies.

Summarized below are selected biomass energy development and research projects, either ongoing or recently completed by TSS.

Policy and Institutional Barriers

Client: Sierra Nevada Research Center – U.S. Forest Service

Location: California

Dates: August 2001 to December 2004

Services: Forestry and Natural Resource Management, Fire Management, Renewable Energy Project Development, Biomass Utilization, Environmental Assessment and Remediation, Risk Assessment and Financial Modeling.

TSS was retained by the Sierra Nevada Research Center to research institutional barriers and constraints to the implementation of fuels reduction and biomass removal projects on federally managed forests in the Sierra Nevada. Through this project, TSS generated a report on the history of biomass utilization from U.S. Forest Service projects in the Sierra Nevada; provided written notes summarizing 65 interviews with public and private stakeholders discussing the institutional and policy barriers encountered when implementing USFS projects; and compiled a final report summarizing key issues, findings, and conclusions.

Survey of Biomass Resource Availability in North America

Client: Confidential

Location: Germany and Texas

Dates: March 2008 to Present

Services: Gasification/Thermochemical Conversion Technology Deployment, Technology Assessment, General Biomass Technical Services.

TSS Consultants carried out a systematic review of the woody biomass resources in the 50 United States and 11 Canadian Provinces. Several hundred source documents were reviewed for resource information and vetted for reliability. Additional analyses, evaluation, and discussions with state, regional, and local woody biomass resources experts was conducted to evaluate 45 fuel sheds that were deemed to have adequate and economically available woody biomass resources to support at least one biomass conversion (biomass to power and fuels) facility of 250 tons per day input. Ultimately, this list of 45 was narrowed down to 15 potential sites that the client will further investigate in detail for potential facility siting.

Technology Assessment for a Biomass Combined Heat and Power Facility in the Lake Tahoe Basin

Client: County of Placer (CA) Executive Office

Location: Placer County, CA

Dates: January 2008 to Present

Services: Advanced Combustion and Gasification Technology Deployment, Technology Assessment, General Biomass Technical Services.

TSS Consultants is conducted a technology assessment to identify potential developers and vendors of small scale advanced direct combustion and gasification technologies that could utilize forest-sourced biomass from hazardous fuels thinning activities in and around the Lake Tahoe Basin of California and Nevada. In conducting the assessment, over 200 biomass energy technology/utilization companies were examined, with nearly 50 selected to receive a Solicitation of Interest. Twenty-eight companies considered the SOI with 11 companies submitting sufficient information to be evaluated further. Ultimately 4 companies were selected for an in-depth financial analysis and to be ranked accordingly.

Commercial Biomass Power Development in Oregon

Client: Energy Trust of Oregon, Inc.

Location: Oregon

Dates: April 2008 to Present

Services: Identify prospective commercial scale biomass power projects within Oregon benefiting from co-located facilities; assist the Energy Trust of Oregon, Inc. in outreach and communications programs.

TSS Consultants conducted a review of Oregon enterprises that are prospective candidates for co-located biopower facilities. The firm conducted interviews to determine factors acting as barriers to project development and solicit suggestions on how to address and overcome these barriers. TSS Consultants identified over 50 potential candidates. The results of the interviews will be summarized and will include a ranking of enterprises with the greatest likelihood of full biomass project development within the next three years. TSS Consultants will develop biopower project information and data, and initiate outreach via web and conferences. The firm is to assist the Energy Trust of Oregon, Inc. in achieving the goal(s) of development of five enterprises issuing equipment purchase requests, issuance of three power purchase agreements, and development of 20 MW of new biopower within Oregon.

Fuel Availability Study and Fuel Procurement Plan

Client: Minnesota Power

Location: Northern Minnesota

Dates: May 2007 to present

Services: Fuel Availability Assessment, Competition Analysis, Fuel Pricing Analysis, Communications Plan Development, Transportation System Analysis and Fuel Procurement Plan Development.

In February, 2007, the State of Minnesota enacted a Renewable Portfolio Standard requiring public utilities to provide 25% of their retail generation as renewable energy by the year 2025.

In order to meet this legislative mandate, Minnesota Power is developing a new 25 MW biomass power generation facility. TSS has been retained to assist in this effort by providing a comprehensive fuel resource availability assessment and fuel procurement plan.

Biomass Utilization Feasibility Study

Client: Coquille Indian Tribe

Location: Oregon

Dates: March 2007 to present

Services: Renewable Energy and Fuels Project Development, Feedstock Assessment and Acquisition, Biomass Utilization, Technology Evaluation, Financial Analysis, Communications Plan Development, Environmental Assessment.

TSS has been retained by the Coquille Indian Tribe to conduct a feasibility study on the establishment of a biomass utilization facility on the Central Coast of Oregon. Work efforts for this study include: biomass resource assessment and sustainable supply analysis; site analysis and environmental review; technology review; market review for potential of producing value-added products; review of benefits and incentives for developing a biomass project; review of current power transmission infrastructure; analysis of current and potential markets for sale of baseload renewable biomass power; financial assessment; assessment of Tribal capacity to develop, implement, and operate a biomass-based business.

Biomass Utilization Feasibility Study

Client: Tusayan-Grand Canyon Sustainable Energy Project (T-GCSEP)

Location: Arizona (Grand Canyon Region)

Date: July 2003 to December 2004

Services: Renewable Energy and Fuels Project Development, Feedstock Assessment, Biomass Utilization, Technology Evaluation, Financial Analysis, Environmental Assessment.

TSS was retained by the Tusayan-Grand Canyon Sustainable Energy Project (T-GCSEP) Committee to conduct a preliminary feasibility study on the establishment of a biomass utilization facility near the Grand Canyon National Park in northern Arizona. Taking into account issues such as local infrastructure, feedstock availability, regulatory constraints, and community acceptance, potential plant site locations were analyzed. Once the committee selected a preferred site, a fuel/feedstock assessment was conducted to determine the amount of biomass material (in the form of woody biomass from forest restoration activities), biosolids (from the local waste water facility), and locally generated MSW was available within a 50-mile radius of the target site. The fuel/feedstock assessment was then used to conduct a technology assessment to review and rank currently available gasification and combustion technologies that were capable of converting locally available biomass into heat and electrical energy, while meeting local regulatory issues and community needs. Two preferred technologies were selected for detailed financial analysis.

Feasibility Study and Biomass Fuel Availability Study

Client: Warm Springs Forest Product Industries and the Confederated Tribes of Warm Springs Oregon

Location: Central Oregon

Dates: November 2003 to present

Services: Biomass Energy Project Development, from Biomass Availability Study to Environmental Permitting.

Warm Springs Forest Products Industries, the sawmill enterprise for the Confederated Tribes of Warm Springs, retained TSS to provide technical assistance with the development of an 18 MW bioenergy project. TSS led the effort to complete a Biomass Fuel Availability Study which confirmed the economical availability of biomass fuel for the project. TSS is currently providing the following services:

- Economic analysis – financial proformas;
- Biomass fuel supply development (including urban wood and green wastes);
- Negotiations with federal agencies regarding long term stewardship contracts;
- Environmental permitting and compliance;
- Negotiation of power sales agreement;
- Interfacing with state/federal agencies;
- Sourcing federal funds in support of the project.

Biomass Technical Services

Client: Arizona Public Service

Location: Phoenix, Arizona

Dates: September 2003 to September 2004

Services: Fuel Procurement Contracts, Review of Current Biomass Technologies, General Biomass Technical Services.

TSS was retained by Arizona Public Service to provide technical services that included a field tour of current biomass power generation facilities in Northern California. The technical field tour was arranged to review biomass projects ranging in scale from 6 MW to 12 MW and utilizing a variety of biomass fuel sources. TSS also developed a long-term fuel procurement contract template using terms and conditions consistent with technologies and fuel sources planned for development by the client. TSS provided consulting services on biomass utilization technologies, fuels procurement and project siting.

Preliminary Feasibility Study for a Biomass Utilization Project on the Yurok Reservation

Client: Yurok Tribe

Location: Yurok Indian Reservation, California

Dates: February 2002 to March 2003

Services: Forestry and Natural Resource Management, Fire Management, Biomass Utilization, Environmental Assessment and Remediation, Risk Assessment and Financial Modeling.

The Yurok Tribe retained TSS to conduct a preliminary feasibility study for the siting of a small biomass utilization project to provide electricity to a remote location on the Reservation. The primary objective of this feasibility study was to assess factors that would influence the successful financing, development, installation and operation of a small, biomass-fired energy generation facility. The preferred site location for the biomass facility was adjacent to an elementary school currently reliant upon diesel generators for electrical power.

Imperial Resource Recovery and the Mesquite Lake Generating Facilities Review

Client: Confidential

Location: Southern California

Date: 2003

Services: Renewable Energy and Fuels Project Development, Feedstock Assessment, Biomass Utilization, Technology Evaluation, Financial Analysis, Environmental Assessment.

TSS was retained to evaluate two Imperial Valley, CA biomass facilities for both acquisition by the client and potential for the facilities to utilize bio-solids, urban wood waste, and livestock manure as fuel. TSS conducted an engineering evaluation for restarting these facilities (they had been non-operational for several years) and modifying the facilities where needed to accept the proposed fuel. TSS also conducted an environmental permitting and compliance review to determine what air quality, water quality, and land use issues would arise from the use of the proposed fuel.

Renewable Energy Complex of Imperial Valley

Client: Global Renewable Energy Partners, Inc.

Location: Southern California

Date: 2003

Services: Renewable Energy and Fuels Project Development and Environmental Assessment.

TSS was retained as part of a technical team evaluating the potential development of a renewable energy complex in Imperial Valley which was to include anaerobic digestion of local cattle manure, an 80 million gallon per year ethanol plant, and a cogeneration facility that would provide all of the energy needs of the complex. Principal tasks for this project were review of the technical feasibility study previously prepared and identification of all environmental and siting issues. A permitting plan was prepared with particular emphasis on air quality, water quality, and land use.

Sacramento Municipal Utility District Biomass Program

Client: Sacramento Municipal Utility District

Location: Northern California

Date: October 2005 to June 2008

Services: Renewable Energy and Fuels Project Development, Feedstock Assessment, Biomass Utilization, Technology Evaluation, Financial Analysis, Environmental Assessment.

TSS has been contracted by SMUD for biomass consulting on a wide array of biomass utilization and development projects. To date these have included:

- Working with dairy farmers to develop projects using dairy cow waste (manure) in anerobic digesters to produce methane gas for generating electricity;
- Evaluating numerous California and West Coast biomass power plants for potential acquisition of "green" biomass electrical power;
- Evaluating the possibility of siting a biomass power plant in the SMUD service area (Sacramento County).

TSS assists SMUD on a continuous basis with any and all biomass-related projects.

Biofuels Technology Study

Client: California Energy Commission (funded by the Western Governor's Association)

Location: California

Dates: July 2006 to August 2007

Services: Biofuels Production and Biomass Utilization Technology Evaluation.

TSS reviewed and summarized important past biofuel technology development projects in California and the Western U.S. region for the California Energy Commission. Candidate biomass utilization technologies which were under active development in the private and public sector were reviewed and evaluated for the production of ethanol and other biofuels from biomass feedstocks (including MSW). TSS utilized its wide database of organizations that have developed technologies for the conversion of biomass to renewable fuels and energy. A principal objective of this study was to identify opportunities in California for projects involving research, development, demonstration and ultimately commercialization of technologies to produce biomass-based fuels. Our study:

- examined the most appropriate matches between candidate technologies and California's inventoried biomass and MSW resources; and
- determined the best options for biofuel production and combined biofuel and electricity production versus electricity production only.

Handbook for Developing Biomass to Liquid Fuels Projects in New Mexico

Client: New Mexico Energy, Mineral, and Natural Resources Department

Location: New Mexico

Dates: December 2003 to July 2004

Services: Renewable Energy and Fuels Project Development.

TSS was retained by the New Mexico Energy, Minerals, and Natural Resources Department to produce a handbook of guidelines for businesses interested in developing biomass to liquid fuel products. This comprehensive handbook outlines risk assessment, preliminary and comprehensive feasibility studies, obtaining project financing, procurement of equipment and project construction, and start up and operation of a biomass project.

Gridley Biomass-to-Energy Demonstration Project

Client: City of Gridley, CA (funded by the National Renewable Energy Laboratory and U.S. Department of Energy)

Location: Northern California

Dates: February 2002 to April 2008

Services: Renewable Energy and Fuels Project Development, Feedstock Assessment, Biomass Utilization, Technology Evaluation, Financial Analysis, Environmental Assessment and Remediation, Environmental Impact Assessment.

TSS has been working for the City of Gridley (California) on a multi-year, multi-million dollar project funded by the National Renewable Energy Laboratory (NREL) and the U.S. Department of Energy (DOE) Biomass Program. This project is multi-faceted, with a systematic evaluation of emerging technologies to produce ethanol using biomass feedstock. Both biochemical (hydrolysis of biomass and fermentation of resultant sugars) and thermochemical (biomass gasification and syngas reformation to ethanol) conversion technologies have been evaluated in detail.

Working with the City, NREL, DOE, and technology developers, the project has developed into a combined heat and power (CHP) utilizing locally available biomass in a gasification system to supply electricity and process heat energy to a large, year-round food-processing facility in the city. Excess electricity will be sold to the City's utility district and use of renewable energy credits will be involved. A portion of the syngas produced from the gasification of biomass will ultimately be converted to ethanol via the Fischer-Tropsch process. Current project size will utilize up to 500 bone dry tons of biomass per day and produce at least 12.5 MW of electricity, along with several million gallons of ethanol per year. TSS has been in charge of all aspects of this project, from resource assessment, initial feasibility study, early discernment of permitting needs, community outreach, technology evaluation (and selection), financial analysis, and working with the City to acquire additional public sector funds for project development, and private sector involvement to build and operate the facility. TSS is also working with the client on power purchase agreements for electricity generated, marketing of ethanol produced by the facility, as well as potential renewable energy credits.

Life-Cycle Assessment of the Costs and Benefits of Using Wildland Biomass to Generate Electrical Power

Client: Pacific Southwest Research Station, U.S. Forest Service

Location: California

Dates: January 2005 to present

Services: Renewable Energy Project Development, Biomass Utilization, Environmental Assessment and Remediation, Environmental Impact Assessment.

TSS was retained by USDA Forest Service's Pacific Southwest Research Station to assist in the development and implementation of a comprehensive economic, environmental and energy (3E) life cycle assessment (LCA) model that can be used to evaluate the potential public benefits of electricity generation from forest remediation materials. TSS has the lead responsibility for developing an LCA model framework, data formats, and software development for this California Energy Commission-sponsored U.S. Forest Service managed project to estimate the potential public benefits of utilizing woody biomass from forest remediation for electricity generation. This LCA is unique as it is using an economic, environmental, and energy LCA approach to evaluate a wide range of resource management based opportunities; from determining the viability of promising conversion technologies (e.g., biomass to transportation fuels) to comparing the development of alternative fueling infrastructures for renewable transportation fuels (bio-diesel, ethanol, hydrogen).

Conversion Technology Assessment

Client: East Bay Municipal Utility District

Location: Oakland, California

Dates: August 2004 to June 2005

Services: Thermochemical Conversion Technology Review, Technology Assessment, General Biomass Technical Services.

TSS Consultants carried out a technical assessment on the potential application of various thermochemical processes for the conversion of waste biomass at the East Bay Municipal Utility District wastewater treatment plant in Oakland, California. This project included the review of various thermochemical conversion technologies, preliminary assessment of processing and manufacturing systems, equipment and material balances for a full-scale commercial plant, the calculation of energy balances and energy efficiencies for a proposed commercial plant, and a preliminary environmental assessment to identify potential environmental impacts.

Biomass Resource Management/Technical Assistance

Client: University of California at Berkeley

Location: Northern and Central California

Dates: January 2002 to June 2005

Services: Forestry and Natural Resource Management, Renewable Energy Project Development, Biomass Utilization, Environmental Assessment and Remediation

The University of California at Berkeley retained TSS to coordinate a research project addressing the sanitary management and utilization of Sudden Oak Death (SOD) infected

material. A primary objective of this project was to assist affected counties by demonstrating ways to facilitate disposal and utilization of woody materials infected with SOD. Infected material was accepted at two SODBuster collection yards located adjacent to areas with high levels of SOD. The material accepted at these yards was used to further research the pathogen. TSS was the prime contractor in the coordination and management of this project.

Forest Fuels Treatment Trials

Client: Central Oregon Intergovernmental Council

Location: Oregon, Washington, and Idaho

Dates: October 2001 to June 2003

Services: Forestry and Natural Resource Management, Fire Management, Biomass Utilization, Environmental Assessment and Remediation, Risk Assessment and Financial Modeling.

The Central Oregon Intergovernmental Council retained TSS to manage a research project assessing the costs, production, and impacts of mechanical equipment systems used to treat non-commercial forest biomass in the dry forests of the Intermountain West. The project was funded by the USDA Forest Service with the intention of organizing and coordinating realistic fuels treatment trials in four locations in three states. The results of these trials were synthesized and disseminated to natural resource agency personnel, local contractors, and other interested groups and organizations. The long-term project outcomes included a detailed analysis of the most appropriate mechanical systems, reduced environmental impacts of these systems, increased efficiency of these systems and subsequently greater acreages treated for hazardous fuels reduction, and the retention and creation of local jobs.

Assessment of the CA BLM Community Assistance and Hazardous Fuels Programs

Client: Bureau of Land Management

Location: California

Dates: March 2005 to October 2005

Services: Forestry and Natural Resource Management, Fire Management, Environmental Assessment and Remediation.

The Bureau of Land Management/California State Office retained the services of TSS to assess the effectiveness of their Community Assistance and Hazardous Fuels program as funded and directed by the National Fire Plan. This project evaluated the efficiency and effectiveness of hazardous fuels treatments as well as assessed successful behavioral changes associated with education and outreach services. It also provided the BLM with a framework for assessing the social and environmental benefits and public education outcomes associated with its Community Assistance and Hazardous Fuels programs.

Biological Assessments for Fuel Mitigation Projects

Client: California Department of Forestry and Fire Protection

Location: San Bernardino, Riverside and San Diego Counties

Dates: November 2005 to present

Services: Forestry and Natural Resource Management, Fire Management, Environmental Assessment and Remediation.

TSS Consultants was contracted by the California Department of Forestry and Fire Protection to conduct biological resource assessments for a regional fuels mitigation project intended to reduce the threat of wildfires in three Southern California counties. Primary duties of TSS for this project include:

- Conducting field assessments to document baseline conditions of biological resources;
- Identification and mapping of sensitive biological resources (e.g., wetlands, meadows);
- Identification and mapping of habitat for special-status species;
- Identification of biological resource issues that may provide a constraint to proposed treatment activities;
- Preparing scientific reports that document the results of field assessments and provide recommendations for the protection of sensitive or important biological resources.

References

Client: *Minnesota Power*

Representative: *Mike Polzin, Renewable Fuels Coordinator, Fuels Services*

Phone number: *(218) 628-3627, ext. 5741*

Client: *Marubeni Sustainable Energy, Inc.*

Representative: *John Wood, Senior Vice President*

Phone number: *(619) 398-8446*

Client: *University of California, Berkeley*

Representative: *John Shelly, Biomass Utilization Advisor*

Phone number: *(510) 665-3491*

Client: *USDA Forest Service*

Representative: *Mark Nechodom, PI, Life Cycle Assessment Project*

Phone number: *(530) 759-1706*

Client: *Central Oregon Intergovernmental Council*

Representative: *Scott Aycok, Program Manager*

Phone number: *(541) 548-9525*

Client: *California State Office, Bureau of Land Management*

Representative: *Craig Barnes, State Fuels Manager*

Phone number: *(916) 978-4433*

Client: *California Department of Forestry and Fire Protection*

Representative: *Thomas Porter, Forester II*

Phone number: *(619) 851-0445*

Client: *Sacramento Municipal Utility District*

Representative: *Michael DeAngelis, Manager, Advanced Renewables and Distributed Generation Technologies*

Phone number: *(916) 732-6589*

Client: *Tusayan Sustainable Energy Committee*

Representative: *Barry Baker, Chair, South Grand Canyon Sanitary District*

Phone number: *(928) 638-0614*

Client: *San Jose Water Company*

Representative: *John Tang, Engineer*

Phone number: *(408) 279-7851*

Private sector financial institutions that have retained TSS to conduct risk assessment analysis on selected projects include:

ABN-AMRO Bank, N.V.
135 South LaSalle Street
Chicago, IL 60603

Sanwa Bank Ltd.
10 South Wacker Drive
31th Floor
Chicago, IL 60606

Swiss Bank Corporation
4 World Trade Center
Box 395, Church Street Station
New York, NY 10008

The Fugji Bank Ltd.
333 South Grand Avenue
Los Angeles, CA 90071

Donaldson, Lufkin & Jenrette Securities Corporation
140 Broadway
New York, NY 10005-1285

AT&T Capital Corporation
44 Whippany Road
Morristown, NJ 07962-1983

GE Capital Corporation
1600 Summer St., 5th Floor
Stamford, CT 06927

National Westminster Bank USA
175 Water Street
New York, NY 10038

Morgan Stanley Capital Group, Inc.
2000 Westchester Avenue
Purchase, New York 10577

Viridis Energy Capital Pty Limited
Level One, 167 Flinders lane
Melbourne 3000, Australia