



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** July 25, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Steering Committee In-Person meetings—  
July 19-20, 2006

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The Brake Pad Partnership (BPP) Steering Committee held an in-person meeting on July 19<sup>th</sup> and 20<sup>th</sup> in San Francisco. A copy of the agenda for the Steering Committee meeting is attached. These notes reflect the key outcomes of the meeting.

The purposes of the Steering Committee meeting were to:

- Review technical studies status, schedule, commitments under the Proposition 13 grant contract, and needs for project completion.
  - Plan specifically for a revised approach to watershed modeling
  - Consider funding options for project completion
- Obtain updates on copper research and management efforts, including:
  - SF Bay Copper Management Strategy
  - NOAA Fisheries research on copper and salmon
  - Status of U.S. EPA's water quality criteria revision for copper
  - Status of California copper TMDLs
- Discuss development of a framework for evaluating the technical study results.
- Discuss commitments and expectations beyond the completion of the technical studies.
- Identify opportunities to strengthen our communication with our stakeholder communities.

The following people participated in the Steering Committee meeting:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Chris Shepley (Affinia)
- Michael Endicott (Sierra Club)
- Jim Pendergast and Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

Steering Committee member Tim Merkel (AscenZ Friction & Brake) was unable to attend. Others that participated in parts of the meeting including Richard Looker (Regional Water Board), Terry Cooke (URS), Tony Donigian (Aqua Terra); and John Johnston (Sacramento State professor and contractor representing Caltrans).

### **Action Plan Studies Status**

**Funding for Watershed Modeling.** Sustainable Conservation announced that Caltrans has tentatively agreed to provide funding for the BPP's watershed modeling. Sustainable Conservation will work with Caltrans staff to secure final approval for this funding and to establish contracts to route the funds from Caltrans to the watershed modeling contractor. A Caltrans representative (Sacramento State Professor John Johnston) sat in on the watershed modeling portion of the meeting.

**Watershed Modeling Workplan.** With resources that are likely to be available, a contract watershed modeler will not be able to complete all modeling that might be desired by all BPP stakeholders. The Steering Committee met with Aqua Terra, the probable watershed modeling contractor, to review what would be possible to accomplish with available resources. Aqua Terra has impressive experience and gave an excellent presentation to the Steering Committee. Since Aqua Terra currently works closely with U.S. EPA on BASINS modeling (the modeling system that U.S. EPA was using for the BPP), Aqua Terra anticipates that it will be able to start with the modeling already completed by Jim Carleton. Aqua Terra also plans to use information from other related modeling efforts in the San Francisco Bay Area and from tasks in progress on a U.S. EPA contract to make the BPP's modeling effort as cost-efficient as possible. Aqua Terra recommended priorities for the modeling scope of work to the BPP, which the Steering Committee discussed. The Steering Committee will be doing its best to find funding to complete a scope of work that includes all priority items.

**Schedule.** The Steering Committee and Sustainable Conservation discussed the project timeline. The scientific studies schedule is entirely dependent on the contracting timeline for the watershed modeling, which in turn relies on obtaining a firm funding source and establishing contracts for this modeling. Once the funding is secured, an updated timeline will be prepared and distributed. The schedule for completing the BPP includes both the completion of the grant-funded scientific studies (about a year after the watershed modeling starts) and the final phase of the project, which is decision-making by Partnership members and completion of final implementation actions based on the BPP's final joint decisions (about 6 months to 1 year after scientific studies are completed).

### **Other California Copper TMDLs**

**Southern California Copper TMDLs.** The level of interest in brake pads as a copper source has increased significantly in the last year in Southern California, due to adoption of several TMDLs with aggressive implementation schedules for reductions of copper in urban runoff. To explain this change and initiate a discussion of how it will affect the BPP, I reviewed the wasteload allocation framework and implementation plan schedules for the Los Angeles River metals TMDL, the San Gabriel River metals TMDL, the Ballona Creek metals TMDL, and the Chollas Creek metals TMDL. Reaction to these TMDLs was the reason for legislation sponsored by the City of Los Angeles earlier this year. These TMDLs raise two issues for the BPP Steering Committee:

- **Schedule.** The schedule for implementation of copper reductions required by these TMDLs (initial reductions in 4-6 years; full reductions in 10-15 years) assumes that copper reductions from major copper sources would occur more

quickly than the BPP currently anticipates generating copper reductions in brake pads—and BPP-related reductions would only occur if the BPP agrees that copper reductions are necessary based on the findings of BPP scientific studies.

- Watersheds an environmental endpoint. Based on the initial interests of agencies in the San Francisco Bay area, the BPP has focused its process on an exploration of how brake pad copper contributes to copper levels in San Francisco Bay. Bay watersheds are being considered in the modeling, but the decision-making process was anticipated to be based on the outcomes of Bay modeling.

The BPP Steering Committee discussed both topics at some length. Among Steering Committee members there was general acceptance of the need to consider watersheds as an environmental endpoint, which should be feasible within the existing scientific studies framework (though it may raise questions for the modelers that we do not have funds to address). The schedule issue is more challenging, as it is affected by product cycles that are controlled by automobile manufacturers (who are the customers of brake pad manufacturers) and by lag times inherent in environmental systems (copper accumulated in the watershed from past copper use likely will take a long time to wash out of the system). The Steering Committee plans continued discussions of these topics, particularly of the schedule issue, as it is interested in providing a positive response to these TMDLs.

### **Project Outcomes**

Interpretation of Results of BPP's Scientific Studies. The Steering Committee began discussion of how it would work together and with stakeholders to evaluate the results of the BPP's scientific studies and determine the final outcome of the Partnership. Although these discussions were very preliminary, they were encouraging because they reflected some important changes in the industry's attitude over the last few years:

- Commitment to work together. Discussions showed that all Steering Committee members have a strong commitment to work together to understand the meanings of the scientific study results in relationship to the interests of all stakeholder groups.
- Understanding of context. The context of the outcome—how it relates to things like other copper sources, TMDLs, permit requirements—is an important consideration for all parties.
- Definition of a “significant contributor”. In 1999, brake pad manufacturers promised to introduce new lower copper products if brake pads were found to be a significant contributor to water quality impairment. The Steering Committee—including manufacturers—is moving toward an understanding that a “significant contributor” isn't necessarily the largest copper source, just a substantial one.
- Watersheds as an endpoint. As mentioned above, the Steering Committee recognizes that final evaluations of scientific study results will need to consider both watersheds and the Bay as endpoints.

Brake Pad Copper Use Report. The Steering Committee discussed the potential long-term need for the brake pad industry to report annually on its copper use, which it has

been doing since the late 1990s. I explained that industry-supplied brake pad copper use data are considered the best indicator for tracking brake pad copper for purpose of implementing the San Francisco Bay Water Quality Attainment Strategy for copper. Industry representatives continue to be committed to providing these data in the near term, but said that they anticipated that they would get resistance to making the copper use reporting program permanent (with no future end date). The Steering Committee agreed that the potential need for long term reporting on brake pad copper use would depend on the final outcome of the BPP. This topic will be revisited in Steering Committee discussions leading to the final BPP outcome.

### **Other items**

- **Stakeholder Communications.** The Steering Committee agreed that additional communications to stakeholders are greatly needed. It identified needs for near term communications (stakeholder updates), stakeholder meetings to discuss the two upcoming modeling reports (watershed and Bay modeling reports), and planning for items to support stakeholder and Steering Committee member discussions that will determine the final outcome of the project. The Steering Committee did not have time to discuss this topic fully, but plans to do so in a future teleconference.
- **U.S. EPA Copper Water Quality Recommended Criteria.** U.S. EPA intends to publish new recommended criteria for copper, based on draft criteria previously published in the *Federal Register*. The current intent is to publish a freshwater criterion for copper this fall that is based on the Biotic Ligand Model (BLM). Calculation of a standard based on this method would require measurement of up to a dozen water quality parameters; however, allowable copper levels could be somewhat higher than allowed under current standards. U.S. EPA intends to wait for completion of the BLM for salt water before proceeding with a revised salt water recommended criterion (the proposed criterion was somewhat lower than the current criterion). It is likely that NOAA Fisheries will have concerns about adoption of BLM-based standards for any salmonid habitat waterbody because its research shows that affects on salmon sensory organs are not greatly affected by hardness and are less affected by the presence of dissolved organic carbon than would be anticipated under the BLM. U.S. EPA Region 9 has no plans to modify the California Toxics Rule to reflect these (and other) national recommended water quality criteria changes, so they are not likely to have an effect in California in the near term.
- **Project Budget.** Assuming funds are indeed secured from Caltrans to support watershed modeling, the budget situation will no longer be dire; however, funds are still needed to support Sustainable Conservation for Steering Committee coordination and stakeholder communication. Additional funds may also be required to support project-related costs in the final project phases, which could include small additional technical analysis tasks (for example, the Steering Committee could need a few additional modeling runs to improve our understanding about the relative importance of various copper sources, to improve understanding of relative uncertainties, or to better understanding of the sensitivity of the modeled outcomes to various input parameters).

- Air Deposition Modeling Final Report. The final report is anticipated by the end of July.

### **Anticipated Next Steps**

In the coming months, I anticipate that Steering Committee activities will involve teleconference meetings about once every 3 weeks, engagement in the watershed modeling and Bay modeling, and extensive preparation for the final phases of the Partnership, which will determine its overall outcome. The Steering Committee is tentatively planning one or two in-person meetings in the next year, depending on the need for face-to-face interaction identified by the Steering Committee and the schedule for the watershed modeling. The Steering Committee anticipates stakeholder workshops around each of the two remaining modeling reports.

The upcoming Steering Committee meeting schedule is in the process of being established by Sustainable Conservation.

**BRAKE PAD PARTNERSHIP**  
***Steering Committee Meeting***

Wednesday, July 19, 2006  
8:30 a.m. to 5:00 p.m.

Thursday, July 20, 2006  
8:30 a.m. to 12 noon

Sustainable Conservation  
121 Second Street, Sixth Floor  
San Francisco, CA 94105  
Phone: 415-977-0380

**MEETING OBJECTIVES**

- Review technical studies schedule and identify any additional actions need to meet Proposition 13 contract obligations.
- Check in on progress and deepen overall understanding of the watershed modeling effort.
- Update on copper research and management efforts:
  - SF Bay Copper Management Strategy
  - NMFS research on copper and salmon
  - Status of EPA's water quality criteria revision for copper
  - Status of California copper TMDLs
- Discussion and development of a framework for evaluating the technical study results
- Discussion and development of commitments and expectations beyond the completion of the technical studies
- Identification of opportunities to strengthen our communication with our stakeholder communities.

**SCHEDULE**

**Wednesday, July 19, 2006**

8:00 a.m. Meeting room open, coffee and tea available

8:30 a.m. **Meeting Begins: Partnership Business**

- Announcements of any new developments affecting the partnership
- Report from Sustainable Conservation regarding funding
- Steering Committee call schedule
- Other items?

8:45 a.m. **Technical Studies Schedule Review**

- Review schedule for completion and technical review of watershed modeling and bay modeling studies
- Identify additional actions needed to meet Proposition 13 contract obligations

9:15 a.m. **Updates on Copper Research and Management Efforts**

- SF Bay Copper Management Strategy
- NMFS research on copper and salmon
- Status of EPA's water quality criteria revision for copper

- Status of California copper TMDLs
- 10:15 a.m. Break
- 10:30 a.m. **Watershed Modeling Update** – *Tony Donigian (Aqua Terra)*
  - Overview of modeling approach and introduction of any improvements over the previous approach
  - Discussion
  - Schedule for completion and review
- 12:00 noon Lunch
- 1:00 p.m. **Framework for evaluating the technical study results**
  - Review of previous work on process (flow diagrams)
  - Discussion of preparedness for release of the bay modeling draft and final reports
- 2:00 p.m. **Expectations and Commitments**
  - Review previous commitments and understandings
  - Articulate expectations
  - Using scenarios, explore possibilities for our post-technical studies world
  - Review outstanding issues and identify any missing ones:
    - Addressing copper use in the aftermarket
      - Prepare questions for manufacturers to bring to August BMC/PEC meeting
    - BMC/PEC copper use monitoring program
    - Documentation of the process, results, and commitments
    - Schedule
    - Additional items?
- 5:00 p.m. Adjourn
- 6:00 p.m. Steering Committee dinner at a local restaurant

**Thursday, July 20, 2006**

- 8:00 a.m. Meeting room open, and bagels, coffee, and tea available
- 8:30 a.m. **Meeting Begins: Partnership Business**
  - Strengthening our communications with our stakeholder communities
  - Action items and next steps
- 9:15 a.m. **Expectations and Commitments**
  - Continued exploration and discussion
  - Develop lists of topics, and summarize status of discussions
  - Identify and assign action items for proceeding
- 11:45 p.m. **Review Meeting Accomplishments**
  - Review progress with respect to meeting objectives
  - Next steps

12:00 noon    Adjourn



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Sept. 8, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—September 8, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on September 8<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Chris Shepley (Affinia)
- Mark Phipps (Federal-Mogul Corporation)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club)
- Jim Pendergast (U.S. EPA) and Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

Mark Schlautman (Clemson University, project technical advisor) was unable to participate in the teleconference.

The following items were discussed:

- Watersheds Modeling Status. Science advisor Mark Schlautman, Jim Carleton at U.S. EPA (previous modeler) and Aqua Terra held a teleconference meeting to discuss some minor modeling changes recommended by AquaTerra. These changes relate to how watersheds are divided and how land use within watersheds is modeled. They reported that the recommended changes would improve the model's quality (primarily by improving the hydrology) and would have very minor cost implications for the BPP (primarily to subdivide copper load estimates). The Steering Committee agreed to accept the recommended changes, which would slightly modify the already approved workplan.
- Project Schedule. Sustainable Conservation is continuing to work on a revised project timeline, which cannot be completed until the timing of the funding from Caltrans is known. The contracting process with Caltrans to provide funding for the watershed modeling is underway, but no timeline is yet available for completing it. (Karl Dreher is the Caltrans contact person.) The watershed modeling report is anticipated to be complete about 20 weeks after the contract is in place. Subsequent steps include stakeholder review of the watershed report, finalizing it, and then completing the draft and final Bay modeling reports. Sustainable Conservation hopes

that Caltrans funds will be in place soon enough to allow the scientific studies to be completed in 2007. This would likely mean that Partnership completion—including securing the final outcome—would not occur before the end of 2008.

- Bay Modeling Workplan. URS completed the final workplan for the Bay modeling. It will be distributed shortly and will soon be posted on the Sustainable Conservation web site.
- BMC/PEC Meeting Report. The manufacturer representatives reported that they recently had a very productive meeting with other BMC members about the likely outcomes of the BPP and possible industry responses.

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- September 29, Friday 9:00 a.m.—Teleconference meeting
- October 20, Friday 11:00 a.m.—Teleconference meeting
- November 3, Friday 9:00 a.m.—Teleconference meeting
- November 21, Tuesday 11:00 a.m.—Teleconference meeting
- December 5, Tuesday 11:00 a.m.—Teleconference meeting
- December 19, Tuesday 11:00 a.m.—Teleconference meeting

**BPP STEERING COMMITTEE TELECONFERENCE**  
Friday, September 8, 2006, 9:00 to 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

**DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
- 2) BPP technical studies update:
  - a) watershed modeling:
    - i) funding from Caltrans
    - ii) schedule
    - iii) work plan modifications:
      - watershed subdivisions
      - land use subdivision
      - increased number of weather stations
      - seasonality of sources/architectural copper
      - temporal resolution of results
    - iv) allocation of air deposition source loadings
  - b) URS final work plan status
  - c) overall schedule for technical studies
- 3) PEC meeting report from Mark Phipps and Bob Peters
- 4) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Sept. 29, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—September 29, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on September 29<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Chris Shepley (Affinia)
- Tim Merkel (AscenZ Friction & Brake)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

Mark Phipps (Federal-Mogul Corporation) and Michael Endicott (Sierra Club) was unable to participate in the teleconference.

The following items were discussed:

- BPP Relationship to California Copper TMDLs. I informed the Steering Committee of two recent CASQA-hosted meetings to discuss the BPP with representatives of other urban runoff programs that are facing challenging timelines for compliance with adopted and pending copper TMDLs. At the meetings, I briefed urban program representatives on the scientific finds of the BPP's work, described the anticipated schedule for completion of the BPP, and discussed possible BPP outcomes. The Southern California urban runoff program representatives expressed support for the BPP's approach, but are concerned that the timeline for copper reductions that could come out of the BPP would be longer than timelines needed to comply with three Los Angeles TMDLs and one San Diego region TMDL (which have timelines for full compliance as short as 10 years [San Diego's Chollas Creek] to as long as 22 years [Los Angeles River]). These timelines are the source of the pressure that caused the City of Los Angeles to propose legislation to put a fee on brake pads earlier this year (this legislation did not move forward).

The BPP has previously agreed to work to see what can be done to address the compliance timelines facing Southern California urban runoff programs. As a first

step, the Steering Committee agreed to agendize a review of manufacturing timelines for its next teleconference meeting.

The short compliance timeline in the proposed Chollas Creek TMDL was of particular concern to the Steering Committee, because the environmental results of reductions in brake pad copper content could not be completed within 10 years, even under the most optimistic scenario. The BPP's research will be providing information that should allow realistic estimates for the time frame that copper reductions would occur in the environment, should manufacturers agree to reduce copper use. Because the Steering Committee is concerned about the implications for the BPP of the proposed short compliance timeline in the Chollas Creek TMDL, the BPP plans to send the San Diego Regional Water Board a letter expressing its concern and recommending that it establish a process for implementation timeline adjustment based on the outcome of the BPP.

- **Project Schedule.** Sustainable Conservation is continuing to work on ways to shorten the project timeline, several of which were discussed by the Steering Committee. There was no update on the watershed modeling schedule, as Caltrans is still in the process of seeking approvals to fund that work.

Among the items discussed is a possible change in approach to the Bay modeling, which would reduce the time needed for model runs. The proposed new approach would entail using data from the draft watershed modeling report to model various Bay water year types (dry, "normal," wet) to determine which water year type is most sensitive to contributions from brake pads. The final Bay modeling would use final watershed modeling results, but would only involve model runs for the most sensitive water year types (3 runs, rather than 9). The Steering Committee is considering this idea, which it plans to discuss again in the next month.

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- October 20, Friday 11:00 a.m.—Teleconference meeting
- November 3, Friday 9:00 a.m.—Teleconference meeting
- November 21, Tuesday 11:00 a.m.—Teleconference meeting
- December 5, Tuesday 11:00 a.m.—Teleconference meeting
- December 19, Tuesday 11:00 a.m.—Teleconference meeting

## **BPP STEERING COMMITTEE TELECONFERENCE**

Friday, September 29, 2006, 9:00 to 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

### **DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
- 2) BPP technical studies update:
  - a) watershed modeling:
    - i) funding from Caltrans
    - ii) schedule
    - iii) allocation of air deposition source loadings
    - iv) range of air deposition loadings around uncertainties in release estimates
  - b) streamlining bay modeling
  - c) overall schedule for technical studies
- 3) BPP update
- 4) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** October 27, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—October 20, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on October 20<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Chris Shepley (Affinia)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

Mark Schlautman (Clemson University, project technical advisor) was unable to participate in the teleconference.

The following items were discussed:

- BPP Input to San Diego Chollas Creek Copper TMDL. The Steering Committee reviewed a draft letter to the San Diego Regional Water Board on the Chollas Creek copper TMDL. The purpose of the letter would be to encourage the water board to structure the TMDL implementation plan to coordinate with the BPP. The currently proposed 10-year timeline is probably incompatible with the BPP (and BPP scientific findings suggest it may be technically infeasible to get brake pad reductions on this timeline). The BPP letter will express the BPP's concern and recommend that the San Diego Water Board establish a process for implementation timeline adjustment (adaptive management) based on the outcome of the BPP. I have discussed this letter with the San Diego City urban runoff program manager, who has assured me that such a letter would be helpful to his program's interests. BPP communications with the San Diego Water Board will also be discussed with the San Francisco Bay Water Board (Richard Looker).
- Funding for Watershed Modeling. Caltrans staff are having success in obtaining approvals to provide funding for the BPP's watershed modeling; however, all approvals are not yet in place. Caltrans has told Sustainable Conservation that funding may be available as soon as November.

- **Brake Pad Production Timeline—Original Equipment Brake Pads.** The Steering Committee reviewed and discussed the steps involved in taking a brake pad material into production on a new vehicle. This will be further discussed on October 30<sup>th</sup>. Upcoming calls will include discussions of timelines for reformulations in other brake pad categories (most importantly replacement brake pads).

One important issue that manufacturers raised is that they believe that some time would be necessary between any agreement to reduce copper use as an outcome of the BPP and introducing the low-copper or copper-free materials in all of their product lines. The first introductions should occur as promised, but not all products would be changed at the same time. The time needed will depend on the manufacturer. They believe that 3 years is a good estimate, but it could be up to 7-8 years for some companies. This time is needed to complete development of new materials for each and every product line. Companies have many product lines, but research teams are small, limiting work to 1-2 product lines at a time. While they have all pursued research to develop low-copper and copper-free materials that meet client specifications for new vehicles, they have found this research to be technically challenging, which is why more low-copper and copper-free products are not already on the market.

Manufacturers noted that because copper prices have dramatically increased (from about \$1,600/ton in 2003 to \$9,800 this year), the cost of copper is now a meaningful fraction of the cost of a brake pad, which gives them additional motivation to reduce copper use.

- **Stakeholder Update.** The Steering Committee briefly discussed its comments on the draft “Brake Pad Partnership Update,” a short newsletter that will be distributed via e-mail to stakeholders, probably in November.
- **Possible January In-Person Meeting.** The time pressure created by the Southern California TMDLs has created a need for intensive discussion of potential BPP outcomes and feasible implementation schedules. Sustainable Conservation has initiated the process of scheduling an in-person meeting early in 2007 (probably in San Francisco) to discuss these difficult topics. Advancing our understanding of the possibilities will assist us with providing a positive yet realistic response to Southern California TMDLs.
- **Automotive Counseling Group—really the Copper Development Association.** Industry members reported that they have been contacted by a person who said they represented the “Automotive Counseling Group.” Manufacturers have found out that this person actually represents the Copper Development Association. The caller was making inquiries about the BPP.

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- October 30, Monday 10 a.m.—Special teleconference meeting to review potentially sensitive elements in an upcoming presentation about the BPP to CASQA
- November 3, Friday 9:00 a.m.—Teleconference meeting

- November 21, Tuesday 11:00 a.m.—Teleconference meeting
- December 5, Tuesday 11:00 a.m.—Teleconference meeting
- December 19, Tuesday 11:00 a.m.—Teleconference meeting

## **BPP STEERING COMMITTEE TELECONFERENCE**

Friday, October 20, 2006, 11:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

### **DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
  - BPP website document area and document archives updates
- 2) Manufacturer timelines (see attached overhead and figure) (15 min)
- 3) Letter to SDRWQCB (10 min)
- 4) BPP technical studies update: (15 min)
  - a) watershed modeling:
    - i) funding from Caltrans
    - ii) schedule
    - iii) allocation of air deposition source loadings
    - iv) range of air deposition loadings around uncertainties in release estimates
  - b) streamlining bay modeling
- 5) Fall 2006 BPP Update (10 min)
- 6) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Nov. 3, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—November 3, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on November 3<sup>rd</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Chris Shepley (Affinia)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club)
- Kelly Moran (TDC Environmental)

Jim Pendergast (U.S. EPA), Mark Phipps (Federal-Mogul Corporation), and Kirsten Rosselot (Process Profiles, contractor serving as Project Manager) were unable to participate in the teleconference.

The following items were discussed:

- BPP Input to San Diego Chollas Creek Copper TMDL. The Steering Committee reviewed a revised draft letter to the San Diego Regional Water Board on the Chollas Creek copper TMDL. The revised letter was developed by Sustainable Conservation in consultation with Richard Looker of the San Francisco Bay Water Board. The letter continues to request that the Chollas Creek copper TMDL link to the BPP; revisions describe how that linkage is being accomplished by the San Francisco Bay Water Board. The final version of the letter should be completed and sent in the next few days.
- Brake Pad Copper Use Reporting. Model year 2005 brake pad copper use data will be available soon. Manufacturers anticipate having data available for preliminary review during the next Steering Committee teleconference. As usual, Sustainable Conservation will prepare an annual report presenting these data to stakeholders.
- Funding for Watershed Modeling. Final approval of Caltrans funding is anticipated any day. Sustainable Conservation is working with the San Francisco Estuary Project to put the contracts in place as quickly as possible.
- Stakeholder Update. The Steering Committee the “Brake Pad Partnership Update,” is nearly complete. It should be distributed in November.

**Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- November 21, Tuesday 11:00 a.m.—Teleconference meeting
- December 5, Tuesday 11:00 a.m.—Teleconference meeting
- December 19, Tuesday 11:00 a.m.—Teleconference meeting
- January 17-18—In person meeting, San Francisco

Sustainable Conservation is in the process of scheduling teleconference meetings for January and February.

## **BPP STEERING COMMITTEE TELECONFERENCE**

Friday, November 3, 2006, 9:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Letter to SDRWQCB (5 min)
- 3) Update on 2005 Copper Use Monitoring Data (15 min)
- 4) BPP technical studies update: (15 min)
  - a) watershed modeling:
    - i) funding from Caltrans
    - ii) allocation of air deposition source loadings
  - b) streamlining bay modeling
- 5) Fall 2006 BPP Update distribution and feedback (5 min)
- 6) Steering committee call and meeting schedule for January and February (10 min)
- 7) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Nov. 21, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—November 21, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on November 21<sup>st</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Michael Endicott (Sierra Club)
- Kelly Moran (TDC Environmental)

Jim Pendergast (U.S. EPA), Chris Shepley (Affinia), Mark Phipps (Federal-Mogul Corporation), and Tim Merkel (AscenZ Friction & Brake) were unable to participate in the teleconference.

The following items were discussed:

- Funding for Watershed Modeling. Funds from Caltrans to support watershed modeling are in place (thank you Caltrans!). Sustainable Conservation is working with the San Francisco Estuary Project and AquaTerra to get the modeling started as quickly as possible.
- Bay Modeling Workplan Modification. Sustainable Conservation and URS have been exploring possible approaches to completing the Bay modeling more quickly, in light of time pressures placed on the BPP by the grant contract and by Southern California TMDLs. URS has suggested using a coarser modeling grid than originally planned (1,000 meter resolution rather than 200 meter resolution) in the hydrodynamic model of the Bay. This could greatly reduce run times with what URS believes is little loss in output quality, since the input data points are few. The Steering Committee, which was generally receptive to this approach, decided to ask stakeholders and scientific advisory team members for their input on this possible workplan modification.
- Brake Pad Copper Use Reporting. Model year 2005 brake pad copper use data have been received from manufacturers and are being compiled by Sustainable Conservation into an annual report to present these data to stakeholders. The Steering Committee plans to review the draft report during its next teleconference meeting.

- Stakeholder Update. The “Brake Pad Partnership Update,” is complete. Sustainable Conservation will distribute it to the e-mail list and post it on its web site soon.

**Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- December 5, Tuesday 11:00 a.m.—Teleconference meeting
- December 19, Tuesday 11:00 a.m.—Teleconference meeting
- January 17-18—In person meeting, San Francisco
- January 4, Thursday 10:00 a.m.—Teleconference meeting
- February 1, Thursday 10:00 a.m.—Teleconference meeting
- February 15, Thursday 10:00 a.m.—Teleconference meeting

## **BPP STEERING COMMITTEE TELECONFERENCE**

Tuesday, November 21, 2006, 11:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

### **DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
- 2) BPP technical studies update: (15 min)
  - a) watershed modeling:
    - i) funding from Caltrans
    - ii) allocation of air deposition source loadings
  - b) streamlining bay modeling
- 3) Fall 2006 BPP Update distribution and feedback (5 min)
- 4) Copper use monitoring report (15 min)
- 5) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Dec. 5, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—December 5, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on December 5<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

Chris Shepley (Affinia) was unable to participate in the teleconference.

The following items were discussed:

- Industry Copper Use Report. The Brake Manufacturers' Council (BMC) gave the Steering Committee its annual data on copper use in original equipment passenger vehicle and light truck disc brake pads for model year 2005. The data (see the Table on the next page) indicate that *copper use in vehicle disc brake pads was about the same as in model year 2004*.

As usual, Sustainable Conservation will turn the data provided by industry into a BPP report with appropriate explanations and caveats. This report is expected to be completed and approved by the Steering Committee in mid-December. I will distribute the report as soon as it is available.

- Watershed Modeling Initiated. The contract for watershed modeling is in place. A draft report is anticipated this spring, followed by a final report in early July. The Steering Committee intends to review the watershed modeling schedule and consider scheduling a stakeholder meeting in conjunction with the watershed modeling report peer review period.

**Brake Pad Friction Material Copper Content Monitoring Results**

Model Year:	1998	1999	2000	2001	2002*	2003*	2004*	2005*
<b><u>Data from Top 20 New Vehicles Sample**</u></b>								
<b>Total vehicle sales (vehicles)</b>	15,540,765	16,890,536	17,349,932	17,122,368	16,816,368	16,639,053	16,866,920	16,947,754
<b>Top 20 vehicle sales (vehicles)</b>	6,659,538	6,931,931	6,810,462	6,799,008	6,33,977*	7,011,419*	6,535,136*	6,535,136*
<b>Top 20 as a % of total vehicle sales</b>	42.8%	41.0%	39.3%	39.7%	43% (39.4%*)	49.6% (42.1%*)	48.5% (38.7%)	46% (38.1%)
<b>Total friction material in Top 20 (kg)</b>	9,366,940	9,109,322	8,556,864	8,416,727	7,850,371*	8,142,643*	8,112,754*	7,779,893*
<b>Friction material per vehicle (kg)</b>	1.406	1.314	1.256	1.238	1.183*	1.161	1.241	1.206
<b>Cu in Top 20 (kg)</b>	267,462	358,541	384,145	381,507	507,938*	538,992*	424,780*	427,365*
<b>Cu per vehicle (kg)</b>	0.0402	0.0517	0.0564	0.0561	0.0766*	0.0769*	0.0650*	0.0662*
<b>Copper: change from 1998 results</b>	--	+29%	+40%	+40%	+91%*	+91%*	+60%*	+65%*
<b>Copper: change from previous year results</b>	--	+29%	+11%	No change	+37%*	No change	-15%	+2%

\*One manufacturer did not report copper use in 2002-2005. While all of the top 20 vehicles comprised almost half of all model year brake pads, the 2003 sample comprised only 38-42% of brake pads. Data marked with asterisks are for reported brake pads only.

\*\*A list of the Top 20 vehicles for each model year.

**Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- December 19, Tuesday 11:00 a.m.—Teleconference meeting
- January 4, Thursday 10:00 a.m.—Teleconference meeting
- January 17-18—In person meeting, San Francisco
- February 1, Thursday 10:00 a.m.—Teleconference meeting
- February 15, Thursday 10:00 a.m.—Teleconference meeting

## **BPP STEERING COMMITTEE TELECONFERENCE**

Tuesday, December 5, 2006, 11:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

### **DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
- 2) BPP technical studies update: (25 min)
  - a) resuspension of brake pad wear debris that initially fell directly to roadways
  - b) watershed modeling:
    - i) AQUA TERRA subcontract status
    - ii) allocation of air deposition source loadings
  - c) streamlining bay modeling
- 3) Fall 2006 BPP Update distribution and feedback (5 min)
- 4) Copper use monitoring report (15 min)
- 5) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Dec. 19, 2006  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—December 19, 2006

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on December 19<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Chris Shepley (Affinia)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club)
- Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

Jim Pendergast (U.S. EPA), Mark Phipps (Federal-Mogul Corporation), and Mark Schlautman (Clemson University, project technical advisor) were unable to participate in the teleconference.

The following items were discussed:

- Industry Copper Use Report. The report has been finalized and is about to be distributed. (The copper use data it contains were summarized in my previous memorandum). I will forward the report as soon as it is available.
- Technical studies. Work is on track. Sustainable Conservation is using USGS data to complete a simple estimate of copper removed by street sweeping. This will be part of the explanation for why watershed modeling functions estimate that only a fraction of the material that is released on impervious surfaces in a watershed is washed off.
- Planning for In-Person Meeting. The Steering Committee identified agenda topics for the January in-person meeting.

### Anticipated Next Steps

The Steering Committee upcoming meeting schedule is as follows:

- January 4, Thursday 10:00 a.m.—Teleconference meeting
- January 17-18—In person meeting, San Francisco
- February 1, Thursday 10:00 a.m.—Teleconference meeting
- February 15, Thursday 10:00 a.m.—Teleconference meeting

**BPP STEERING COMMITTEE TELECONFERENCE**

Tuesday, December 19, 2006, 11:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

**DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
- 2) BPP technical studies update: (20 min)
  - a) resuspension of brake pad wear debris that initially fell directly to roadways
  - b) watershed modeling runs
  - c) streamlining bay modeling
  - d) air modeling
    - i) comparison of measured and modeled deposition to bay
    - ii) summary memo
- 3) Fall 2006 BPP Update distribution and feedback (5 min)
- 4) Copper use monitoring report (5 min)
- 5) Agenda for in-person meeting (25 min)

Potential topics:

  - Watershed modeling progress to date
  - Bay modeling plans (interface with watershed modeling; strategy for meeting BPP needs)
  - Schedule review
  - Project output (what format will results be presented in, how will we convey the substantiality of non-substantiality of brake pad contributions to copper in the bay)
- 6) Anything else?



# MEMO

## *For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** January 4, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—January 4, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on January 4<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Chris Shepley (Affinia)
- Michael Endicott (Sierra Club)
- Kelly Moran (TDC Environmental)

Jim Pendergast (U.S. EPA) and Tim Merkel (AscenZ Friction & Brake) were unable to participate in the teleconference.

The following items were discussed:

- In-Person Meeting agenda. The Steering Committee reviewed and discussed a draft agenda for the upcoming in-person meeting in San Francisco. The focus of the meeting will be on timelines and possible outcomes of the Brake Pad Partnership. Consideration will be given to Southern California TMDL time frames.
- Technical Studies. The project management team updated the Steering Committee on the status of technical studies, all of which are on track. At the in-person meeting, the Steering Committee will be working to ensure that the linkage between the watershed and Bay modeling will be tight. It will also be considering options for reducing the time required for the Bay modeling to allow the project to be completed somewhat sooner.

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- January 17-18—In person meeting, San Francisco
- February 1, Thursday 10:00 a.m.—Teleconference meeting
- February 15, Thursday 10:00 a.m.—Teleconference meeting

Sustainable Conservation is in the process of scheduling meetings after February.

**BPP STEERING COMMITTEE TELECONFERENCE**

Thursday, January 4, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

**DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
- 2) BPP technical studies update: (15 min)
  - a) watershed modeling runs
  - b) air modeling  
summary memo/revisions to previous estimates
  - c) street sweeping removal
- 3) Fall 2006 BPP Update distribution and feedback (5 min)
- 4) Copper use monitoring report (5 min)
- 5) Draft agenda for in-person meeting (30 min)
- 6) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** March 23, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Steering Committee In-Person meetings—  
January 17-18, 2007

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The Brake Pad Partnership (BPP) Steering Committee held an in-person meeting on January 18<sup>th</sup> and 19<sup>th</sup> in San Francisco. A copy of the agenda for the Steering Committee meeting is attached. These notes reflect the key outcomes of the meeting.

The purposes of the Steering Committee meeting were to:

- Review technical studies status and schedule.
- Ensure that all information and resources required for technical study completion are in place.
- Assure that there will be a technically sound interface between the watershed and bay models and that the modeling plans meet the Partnership's information needs.
- Discuss approaches to presenting and evaluating the technical study results.
- Understand the time frame for potential actions beyond the completion of the technical studies and how this time frame connects with TMDL, legislative, and manufacturer time frames.
- Discuss and develop options for the Partnership's Action Plan after completion of the technical studies.
- Identify potential dates and agenda items for a stakeholder meeting.
- Identify additional opportunities to strengthen our communication with our stakeholder communities.

The following people participated in the Steering Committee meeting:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Chris Shepley (Affinia)
- Michael Endicott (Sierra Club)
- Jim Pendergast and Jim Carleton (U.S. EPA) (by telephone)
- Kelly Moran (TDC Environmental) (by telephone due to illness)

Steering Committee member Tim Merkel (AscenZ Friction & Brake) was unable to attend. Others that participated in parts of the meeting including Richard Looker (Regional Water Board), Terry Cooke (URS), and Tony Donigian (Aqua Terra).

## **Project Outcomes**

Relation of BPP to California Copper TMDLs. As the BPP has been discussing, the level of interest in brake pads as a copper source has increased significantly in the last year in Southern California due to adoption of several TMDLs with aggressive implementation schedules for reductions of copper in urban runoff. I provided a table summarizing current and pending California copper TMDLs and gave the Steering Committee an update on the implementation timelines, which range from a proposed 10 years in the first draft Chollas Creek TMDL to 15 to 22 years in the Los Angeles region TMDLs. I helped the Steering Committee understand compliance options that the stormwater programs faced and the potential costs and feasibility issues with alternatives (a San Diego report laying out compliance strategies for Chollas Creek was particularly helpful in emphasizing the costs and technical challenges that stormwater programs face). This update set the stage for Steering Committee discussions of possible project outcomes and their time frames.

Key Findings List. The Steering Committee began its discussion of project outcomes by reviewing and listing key findings of the BPP's work to date. This process, which was somewhat time-consuming, involved developing draft consensus factual statements summarizing specific findings. The draft list created in this meeting will continue to be refined and likely will be presented at the June stakeholder meeting. Although this step was time consuming, the joint approach was quite successful, suggesting that it is likely that stakeholders will be able to develop a consensus interpretation of the BPP's technical studies.

Potential Actions to Reduce Copper Releases from Brake Pads. Although stakeholders have not yet made decisions about whether copper reductions will be an outcome of the BPP, the Steering Committee decided that it would be valuable to discuss the nature of possible copper reduction strategies. At the meeting, Steering Committee members began working together to define the range of actions the BPP may pursue based on the results of the studies, including potential legislative remedies.

Timelines for Potential Copper Reductions. A second major discussion was about timelines and timing. The Steering Committee worked to lay out what it knows and what it needs to know about time frames on which copper reductions are needed for TMDLs—and to explore how these mesh with time frames for various potential actions to reduce copper levels in runoff. Insufficient information is currently available to lay out one complete schedule, but the Steering Committee's discussions identified a list of topics that need to be tackled, including brake industry timelines (e.g., for changing pad materials and moving those changed materials onto cars), environmental time frames (what is the lag time for brake pad copper in watersheds?), and timelines for various potential implementation actions. Sufficient information was available to determine that it will be challenging, but not impossible, to design a program that is consistent with current TMDL timelines. Based on this discussion, the Steering Committee decided that *discussion of potential implementation actions needs to begin this summer—it cannot wait until Bay modeling is complete.*

## **Other items**

- Watershed and Bay Modeling. The Steering Committee met with Aqua Terra (watershed modeling contractor), and URS (Bay modeling contractor) to review the watershed modeling status and to ensure that the watershed model will integrate efficiently with the Bay model. Aqua Terra identified a few small tasks that it does not have contract funds to complete. U.S. EPA's Jim Carleton volunteered to work with Aqua Terra to complete model calibrations so that funds will be available for other needed tasks.
- Project Schedule. The need to find funding for the watershed modeling delayed the overall BPP schedule. The grant-funded portion of the project must be completed by December 2007, which appears to be possible with proper management and stakeholder commitment to meeting comment period deadlines. The schedule for ultimately completing the BPP includes both the completion of the grant-funded scientific studies and the final phase of the project, which is decision-making by Partnership members and completion of final implementation actions based on the BPP's final joint decisions. The schedule for this latter phase will depend on the types of implementation actions selected. I expect 6 months to 1 year for decision making and action plan development (this phase may begin prior to completion of the Bay modeling). Implementation actions could take one to several years.
- Stakeholder Communications. The Steering Committee agreed that the fall Stakeholder Update was useful and that the plan for two stakeholder meetings in 2007 (timed with the release of the watershed and Bay modeling reports) is appropriate. The Steering Committee asked Sustainable Conservation to help engage and inform key stakeholder groups over the coming months such that all key players can be ready to participate in development and implementation of a final project action plan.
- Project Budget. Funds are still needed to support Sustainable Conservation for Steering Committee coordination and stakeholder communication. The need is particularly great for 2008, as the state grant funds will be exhausted. Funding in 2008 is likely to be particularly important to stormwater agencies, as Sustainable Conservation will need funding for it to be available to support the Steering Committee as it implements actions coming out of the findings of the technical studies. Additional funds may also be required to support small additional technical analysis tasks (for example, the Steering Committee could need a few additional modeling runs to improve understanding about the relative importance of various copper sources, to improve understanding of relative uncertainties, or to understand better the sensitivity of the modeled outcomes to various input parameters).

### **Anticipated Next Steps**

In the coming months, I anticipate that Steering Committee activities will involve teleconference meetings about once every 2 weeks, engagement in the watershed modeling and Bay modeling, and extensive preparation for the final phases of the Partnership, which will determine its overall outcome. The Steering Committee is

tentatively planning two in-person meetings in 2007 and anticipates stakeholder workshops around each of the two remaining modeling reports.

**BRAKE PAD PARTNERSHIP**  
***Steering Committee Meeting***

Wednesday, January 17, 2007  
8:30 a.m. to 5:00 p.m.

Thursday, January 18, 2007  
8:30 a.m. to 3 p.m.

Sustainable Conservation  
98 Battery Street, Suite 302  
San Francisco, CA 94111  
Phone: 415-977-0380

**MEETING OBJECTIVES**

- Review technical studies schedule and progress.
- Check in on progress and deepen our overall understanding of the watershed modeling effort.
- Assure that we have a technically sound interface between the watershed and bay models and that the modeling plans meet the Partnership's information needs.
- Determine a means of presenting the bay modeling results that clearly conveys the substantiality or insubstantiality of brake pad contributions of copper to the bay.
- Understand the timeframe for actions and potential actions beyond the completion of the technical studies and how this timeframe connects with TMDL, legislative, and manufacturer timeframes. Develop a statement about timeframes for communicating with stakeholders.
- Discuss and develop options for the Partnership's "Endgame" (strategy) and Action Plan.
- Identify potential dates and agenda items for a stakeholder meeting and develop a plan for finalizing the date.
- Identify opportunities to strengthen communication with our stakeholder communities.

**SCHEDULE**

**Wednesday, January 17, 2007**

8:00 a.m. Meeting room open; bagels, coffee, and tea available

**8:30 a.m. Meeting Begins: Partnership Business**

- Announcements of any new developments affecting the partnership
- Report from Sustainable Conservation regarding funding
- Steering Committee call schedule
- Other items?

**8:45 a.m. Technical Studies Schedule Review**

- Review schedule for completion and technical review of watershed modeling and bay modeling studies

**9:00 a.m. Review of BPP Findings and Outstanding Questions to Date**

**9:30 a.m. Timelines and Timing**

- Develop an understanding of the timelines and timing of relevant activities following the completion of the technical studies
  - Status of TMDLs (current and contemplated) and their associated compliance schedules
  - OE and aftermarket manufacturers' timeframes
  - Lag times in the watershed
  - California's legislative schedule
- Discuss implications for meeting stakeholder communities' interests and development of the Action Plan

10:30 a.m. Break

**10:45 a.m. Developing Our Endgame (i.e., Strategy)**

- What are the approaches we can take to meet our Partnership commitments?
  - How do we address aftermarket pads?
  - How do we address OE pads?
  - How do carmakers fit into the Action Plan?
  - What do we do if the results are inconclusive?

12:00 noon Lunch

**1:00 p.m. Developing Our Action Plan (i.e., How We Implement Our Strategy)**

- Based on the morning's conversation, what are the things we will need to do to implement the strategy?

3:00 p.m. Break

**3:15 p.m. Stakeholder Engagement**

- Frame a statement about timelines to share with stakeholders.
- Determine need for additional stakeholder meetings:
  - When? (Agree on plan for finalizing dates.)
  - What to cover in the meetings?
  - How can we use these meetings to prepare stakeholders for the form that the Partnership's final output will take?
- Additional forms of outreach to stakeholders
  - Updates?
    - Effectiveness
    - Feedback
  - Other outreach
    - Website
    - Briefings/meetings

**4:30 p.m. Ambient Concentrations of Copper in the San Francisco Bay – Richard Looker**  
(*San Francisco Bay Regional Water Quality Control Board*)

- Current findings and trends in the San Francisco Bay
- Other data
- What these data are used for and by whom

5:00 p.m. Adjourn

6:00 p.m. Steering Committee dinner at Michael Endicott's house: 900 Ashbury Street, San Francisco, CA 94117. Michael's cell #: 415-740-7343.

### **Thursday, January 18, 2007**

8:00 a.m. Meeting room open; bagels, coffee, and tea available

8:30 a.m. **Watershed & Bay Modeling Updates** – *Tony Donigian (AQUA TERRA) & Terry Cooke (URS)*

- Update on watershed modeling progress, including plans for interfacing with the bay model
- Update on the bay modeling effort, including preview of proposal for shortening modeling run times
- Discussion

10:00 a.m. Break

10:15 a.m. **Format of Bay Modeling Results** – *Terry Cooke (URS)*

- Discussion of the bay modeling outputs and how best to present the modeling results
  - How will the steering committee use these modeled results to convey the substantiality or non-substantiality of brake pad contributions to copper in the bay?

11:15 a.m. **Integrating the Technical Input with Endgame Strategy and Action Plan**

- Discussion of what we learned this morning and how it affects the work we did yesterday

12:00 noon Lunch

1:00 p.m. **Meeting Wrap-Up and Next Steps**

- Continued discussion of yesterday's agenda items
- Review progress with respect to meeting objectives
- Next steps

3:00 p.m. Adjourn



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** Feb. 16, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Calls—February 1 & February 15, 2007

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The Brake Pad Partnership (BPP) Steering Committee held teleconference meetings on February 1<sup>st</sup> and February 15<sup>th</sup>. Copies of the agendas are attached. The following people were on the calls:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Chris Shepley (Affinia)
- Mark Phipps (Federal-Mogul Corporation) (Feb. 15<sup>th</sup> only)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club) (Feb. 15<sup>th</sup> only)
- Jim Pendergast and Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

The following items were discussed during the two teleconferences:

- Stakeholder Meeting. The next stakeholder meeting will be on July 31<sup>st</sup>. Sustainable Conservation is working with the San Francisco Estuary Project to find a location that is convenient to public transit and easy to access from an airport. The meeting is timed to follow completion of the watershed modeling report, so that there can be substantive discussions of the basis of the project's findings about contribution of brake pads to copper in urban creeks. I expect that there will also be meaningful dialog about what next steps for the Partnership might be (other than completing the Bay modeling). This should be the most important stakeholder meeting since the meetings at the initiation of the Partnership in the 1990s.
- Watershed Modeling. The Steering Committee is closely managing the initial phases of the watershed modeling work. Even with Caltrans' funding, the budget is relatively tight, requiring that problems identified by the modelers at Aqua Terra be managed carefully to avoid incurring costs in excess of the available budget. U.S. EPA (Jim Carleton) has volunteered to assist with model calibration runs to help keep costs in control.

A review plan and possible reviewers for the watershed modeling report were discussed. Sustainable Conservation will be following up with previous reviewers,

Caltrans, and academics on previous reviewer lists to complete the peer review team for the draft report, which is anticipated in late spring.

- Land Use/Land Cover Data. When the land use/land cover data were assembled for input into the watershed model last spring (see the “Land Use Land Cover Analysis for Watershed Modeling” memorandum on the Sustainable Conservation web site), USGS 2001 National Land Cover Data (NLCD ) available for the San Francisco Bay Area provided impervious surface estimates, but not land use estimates. The most recent land use estimates were from 1992. The BPP limited its use of the 1992 land use estimates—they were used only in developing copper load estimates from agricultural and industrial sources (for estimating the fraction of county-based agricultural copper use that fell into the Bay watershed, and for apportioning agricultural and industrial loads among modeling watersheds).

The Steering Committee discussed whether using the new data to update the load estimates would meaningfully improve the modeling. U.S. EPA (Jim Carleton) volunteered to look at the data and compare it to the 1992 land use data to help us assess whether the changes in the updated data set could be meaningful for the BPP’s modeling project. Cost and schedule would likely preclude complete revisions of the load estimates at this time, but simple adjustments could be made and/or changes could be considered in the uncertainty analysis.

- Street Sweeping Load Reduction Estimates. Process Profiles is working on a load removal estimate that can be used by the watershed modelers to account for copper removal from impervious surfaces by street sweeping.
- BMC Report. Manufacturers reported that they had good discussions of the BPP’s progress at a recent industry meeting. The industry appears to be gearing up to engage positively in the formation of a plan to respond to BPP research findings. Industry representatives also shared the feedback they received on various options for presentation of modeling results that had been discussed at the recent steering committee in-person meeting.

### Anticipated Next Steps

The Steering Committee upcoming meeting schedule is as follows:

- March 1, Thursday, 10:00 a.m.—Teleconference meeting
- March 15, Thursday, 10:00 a.m.—Teleconference meeting
- April 2, Monday, noon—Teleconference meeting
- April 16, Monday, noon—Teleconference meeting
- April 26, Thursday, 10:00 a.m.—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, San Francisco Bay Area (location to be determined)

Sustainable Conservation will soon schedule Steering Committee teleconference meetings in May, June, and July.

## **BPP STEERING COMMITTEE TELECONFERENCE**

Thursday, February 1, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

### **DRAFT AGENDA**

- 1) Teleconference agenda review, updates from any stakeholder check-ins, anything new? (5 min)
  - 2) BPP technical studies update: (15 min)
    - a) watershed modeling
      - runs/calibration
      - format of final results
    - b) air modeling
      - summary memo/revisions to previous estimates
    - c) street sweeping removal
  - 3) BMC meeting report (10 min)
  - 4) Scheduling of stakeholder conference in July (5 min)
  - 5) Anything else?
- 

## **BPP STEERING COMMITTEE TELECONFERENCE**

Thursday, February 15, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

### **DRAFT AGENDA**

- 1) Teleconference agenda review, anything new? (5 min)
  - updates from any check-ins with stakeholders
- 2) BPP technical studies update: (15 min)
  - a) watershed modeling
    - i) format of final results
    - ii) review process
      - draft charge to reviewers
      - review schedule
      - list of reviewers
  - b) air deposition estimates in watersheds
    - i) addressing significant digits as presented in memo

- c) street sweeping removal
- d) more recent LULC dataset now available

3) Status of stakeholder conference (5 min)

4) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** March 1, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—March 1, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on March 1<sup>st</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Tim Merkel (AscenZ Friction & Brake)
- Michael Endicott (Sierra Club)
- Jim Pendergast and Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

Chris Shepley (Affinia) was unable to participate in the teleconference.

The following items were discussed:

- Technical Studies. The project management team updated the Steering Committee on the status of technical studies, all of which are on track. The Steering Committee discussed review plans for the watershed modeling—both scientific reviewers and a draft charge to reviewers were discussed. The Steering Committee is working to firm up a strong scientific review team and a clear charge to reviewers prior to release of the draft watershed modeling report, which is anticipated to be available at the end of April.
- Stakeholder Meeting agenda. The Steering Committee reviewed and discussed a preliminary draft agenda for the upcoming stakeholder meeting in San Francisco. Since we anticipate policy-level discussions as well as scientific discussions, quite a bit of preparatory work by Steering Committee members will be needed to make it a successful meeting.

**Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- March 15, Thursday, 10:00 a.m.—Teleconference meeting
- April 2, Monday, noon—Teleconference meeting
- April 16, Monday, noon—Teleconference meeting
- April 26, Thursday, 10:00 a.m.—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, San Francisco Bay Area (location to be determined)

Sustainable Conservation will soon schedule Steering Committee teleconference meetings in May, June, and July.

BPP STEERING COMMITTEE TELECONFERENCE  
Thursday, March 1, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)  
updates from any check-ins with stakeholders
  
- 2) BPP technical studies update: (15 min)
  - a) watershed modeling
    - i) format of final results
    - ii) review process  
draft charge to reviewers  
list of reviewers
  - b) air deposition estimates in watersheds
    - i) addressing significant digits as presented in memo
    - ii) taking differences in precipitation into account
  - c) street sweeping removal
  - d) differences in 1992 and 2001 LULC datasets
  
- 3) Planning for the stakeholder conference (15 min)
  
- 4) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** March 15, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—March 15, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on March 15<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Mark Phipps (Federal-Mogul Corporation)
- Tim Merkel (AscenZ Friction & Brake)
- Chris Shepley (Affinia)
- Michael Endicott (Sierra Club)
- Kelly Moran (TDC Environmental)

Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC]) and Jim Pendergast (U.S. EPA) were unable to participate in the teleconference.

The following items were discussed:

- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. Three watershed modeling inputs were discussed:
  - Reapportioned Estimates of Non-Brake Copper Sources. AquaTerra is using a slightly different approach to land use categorization for the watershed modeling than was originally planned by U.S. EPA. This change requires minor adjustments in the estimates of non-brake copper sources such that the releases are allocated according to the new land use categories. Process Profiles has updated the non-brake copper source estimates report to reflect the reapportionment of non-brake copper releases. Because the reapportionment does not change the overall copper load nor loads in individual watersheds, full stakeholder review of these minor changes was not deemed necessary.
  - Approach for Estimating Wet Deposition. AquaTerra recommends adjusting AER's copper wet deposition estimates such that they reflect deposition only when it rains, rather than annual average deposition. The Steering Committee agreed that this minor change would better serve the BPP's purposes, even

though it would result in a slight overestimate of copper deposition in wet years and a slight underestimate in dry years (note that most annual copper deposition is dry deposition). The method for making this adjustment and the associated uncertainties will be discussed in the watershed modeling report.

- Street Sweeping Copper Removal. Process Profiles has completed a simple estimate of copper removal from watersheds via street sweeping, based on a USGS study (Breault, R.F., Smith, K.P., and Sorenson, J.R., 2005, *Residential street-dirt accumulation rates and chemical composition, and removal efficiencies by mechanical- and vacuum-type sweepers, New Bedford, Massachusetts, 2003–04: U.S. Geological Survey Scientific Investigations Report 2005-5184*). This results in a relatively minor amount of estimated copper removal.
- San Francisco Bay Proposed Copper-Related Basin Plan Amendments. I made sure that all Steering Committee members are aware that the Water Board has made available for public comment the proposed San Francisco Bay Basin Plan amendments related to the proposed adoption of site-specific water quality objectives for copper in San Francisco Bay. The Steering Committee briefly reviewed the brake pad-related contents of the plan, which are consistent with what Richard Looker presented to the Steering Committee in January and Clean Estuary Partnership documents that the Steering Committee previously reviewed. I do not expect any Brake Pad Partnership-related comments to be sent to the Water Board.
- San Diego Chollas Creek Proposed Copper TMDL. The San Diego Regional Water Board recently released a revised draft TMDL for copper in Chollas Creek. This draft provides twice as much time for full compliance as the previous draft (20 years instead of 10); however, it requires 80% compliance in 10 years. The Steering Committee asked Sustainable Conservation to call the Regional Water Board manager for the TMDL to inquire about how the TMDL might relate to the BPP's future actions.
- Stakeholder Meeting. The Steering Committee continued its discussion of goals for the upcoming stakeholder meeting in San Francisco.

### Anticipated Next Steps

The Steering Committee upcoming meeting schedule is as follows:

- April 2, Monday, noon—Teleconference meeting
- April 16, Monday, noon—Teleconference meeting
- April 26, Thursday, 10:00 a.m.—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, San Francisco Bay Area (location to be determined)

Sustainable Conservation will soon schedule Steering Committee teleconference meetings in May, June, and July.

BPP STEERING COMMITTEE TELECONFERENCE  
Thursday, March 15, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)
  - updates from any check-ins with stakeholders
  
- 2) BPP technical studies update: (15 min)
  - a) watershed modeling
    - i) re-apportioning source estimates to more land use types
    - ii) review process
      - draft charge to reviewers
      - list of reviewers
  - b) air deposition estimates in watersheds
    - i) addressing significant digits as presented in memo
    - ii) taking differences in precipitation into account
  - c) street sweeping removal
  
- 3) Regulatory updates (10 minutes)
  - a) Proposed Marine Site-Specific Water Quality Objectives for Copper in San Francisco Bay
  - b) Aquatic Life Ambient Freshwater Quality Criteria--Copper 2007 Revision
  
- 4) Planning for the stakeholder conference (15 min)
  
- 5) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** April 2, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—April 2, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on April 2<sup>nd</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Tim Merkel (AscenZ Friction & Brake)
- Kelly Moran (TDC Environmental)

Chris Shepley (Affinia), Mark Schlautman (Clemson University, project technical advisor), Michael Endicott (Sierra Club), and Jim Pendergast (U.S. EPA) were unable to participate in the teleconference.

The following items were discussed:

- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. Everything continues to be on track.
- Street Sweeping Copper Removal. Process Profiles has slightly revised the write-up of a simple estimate of copper removal from watersheds via street sweeping. This revised write-up is awaiting final review from the Steering Committee.
- Stakeholder Meeting. The Steering Committee continued its discussion of goals and a preliminary agenda for the upcoming stakeholder meeting in San Francisco.
- E-mail Update. The Steering Committee reviewed a draft of a BPP e-mail update that Sustainable Conservation intends to distribute to the BPP's e-mail list within the next few weeks. Revisions were minor, but it is being held pending review from other Steering Committee members.
- Press Contacts. Sustainable Conservation is starting to get press interest again in the Brake Pad Partnership, from both TV and radio. This is likely related to the public review of the proposed San Francisco Bay copper site specific objective and water quality attainment strategy. The general policy of the BPP is to route calls to Sustainable Conservation. The Steering Committee had a general discussion about handling press contacts about the BPP, specifically covering what support Sustainable

Conservation can provide and how contacts with individual stakeholder groups might be structured.

Because of unanticipated last minute absences of two teleconference participants, several items on the attached draft agenda were deferred to future meetings.

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- April 16, Monday, noon—Teleconference meeting
- April 26, Thursday, 10:00 a.m.—Teleconference meeting
- May 7, Monday, noon—Teleconference meeting
- May 24, Thursday, 10:00 a.m.—Teleconference meeting
- June 7, Thursday, 10:00 a.m.—Teleconference meeting
- June 25, Monday, noon—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, San Francisco Bay Area (location to be determined)

Upcoming activities will also include review of the draft watershed modeling report (anticipated at the end of April) and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July.

BPP STEERING COMMITTEE TELECONFERENCE  
Monday, April 2, noon (Pacific Time)

Dial: 866-393-8073  
Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)  
updates from any check-ins with stakeholders
- 2) BPP technical studies update: (15 min)
  - a) watershed modeling
    - i) re-apportioning source estimates to more land use types
    - ii) review process  
list of reviewers
  - b) air deposition estimates in watersheds
    - i) taking differences in precipitation into account
  - c) street sweeping removal
  - d) mini-update
- 3) Regulatory update (10 minutes)
  - a) Aquatic Life Ambient Freshwater Quality Criteria--Copper 2007 Revision
- 4) Planning for the stakeholder conference (15 min)
  - a) potential for inviting Nat Sholz to speak
- 5) Call calendar for May and June
- 6) Follow-up to Bob Peter's question about agglomeration of brake pad wear debris on roadways
- 7) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** April 16, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—April 16, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on April 16<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Mark Phipps (Federal-Mogul Corporation)
- Tim Merkel (AscenZ Friction & Brake)
- Jim Pendergast and Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

Chris Shepley (Affinia) and Michael Endicott (Sierra Club) were unable to participate in the teleconference.

The following items were discussed:

- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. The watershed modeling is taking somewhat longer than planned. The draft watershed modeling report is now planned to be released for review the first week of June. This means that the review process will be completed, but the final report will not be published prior to the stakeholder meeting at the end of July. The Bay modeling is still anticipated to be completed within the schedule required by the grant funding. Sustainable Conservation is working with URS and AquaTerra to ensure that there will be no delays in starting the Bay modeling.
- Update to U.S. EPA Water Quality Criteria for Copper. Jim Pendergast explained the scientific basis for the recent U.S. EPA update for the national recommended water quality criteria for copper in fresh water, which are based on the Biotic Ligand Model. The new criteria, if adopted for California, would generally result in higher copper standards for fresh water bodies. Jim and I explained the reasons why these new criteria will probably not result in significant changes in California. These reasons include the fact that neither the State Water Board nor U.S. EPA have plans to update current standards to reflect the new criteria; there would be potentially significant cost

and management challenges to satisfy Clean Water Act antidegradation provisions should the U.S. EPA or the state wish to modify current standards to reflect the new recommended criteria; and an update could be blocked during consultation required by the Endangered Species Act due to the concerns of NOAA Fisheries scientists about the appropriateness of the new standards for fresh water salmon habitat (there are published scientific findings of adverse effects on salmonids that are not consistent with the biotic ligand model).

- Street Sweeping Copper Removal. Process Profiles has completed an a simple estimate of copper removal from watersheds via street sweeping, which is available on the BPP web site:  
[http://www.suscon.org/brakepad/pdfs/StreetSweeperRemovalEstimates\\_03-27-07.pdf](http://www.suscon.org/brakepad/pdfs/StreetSweeperRemovalEstimates_03-27-07.pdf)
- Stakeholder Meeting. The Steering Committee continued its discussion of goals and the agenda for the upcoming stakeholder meeting in San Francisco.
- Preparation for Press Contacts. Sustainable Conservation is planning calls with individual Steering Committee members to prepare for anticipated press contacts in the next phase of the project.
- E-mail Update. The Steering Committee reviewed a revised draft of a BPP e-mail update that Sustainable Conservation intends to distribute to the BPP's e-mail list soon..

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- April 26, Thursday, 10:00 a.m.—Teleconference meeting
- May 7, Monday, noon—Teleconference meeting
- May 24, Thursday, 10:00 a.m.—Teleconference meeting
- June 7, Thursday, 10:00 a.m.—Teleconference meeting
- June 25, Monday, noon—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, San Francisco Bay Area (location to be determined)

Upcoming activities will also include review of the draft watershed modeling report (anticipated in early June) and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July.

BPP STEERING COMMITTEE TELECONFERENCE  
Monday, April 16, noon (Pacific Time)

Dial: 866-393-8073  
Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Preparing for press contact (5 min)
- 3) BPP technical studies update: (15 min)
  - a) watershed modeling schedule
  - b) taking differences in precipitation into account for wet deposition
  - c) street sweeping removal
  - d) bay modeling grid resolution
  - e) mini-update
- 4) Regulatory update (10 minutes)
  - a) Aquatic Life Ambient Freshwater Quality Criteria--Copper 2007 Revision
- 5) Planning for the stakeholder conference (20 min)
  - a) agenda
  - b) stakeholder engagement
- 6) Followup to Bob Peter's question about agglomeration of brake pad wear debris on roadways (5 min)
- 7) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** April 26, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—April 26, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on April 26<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Tim Merkel (AscenZ Friction & Brake)
- Chris Shepley (Affinia)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

Mark Phipps (Federal-Mogul Corporation) and Michael Endicott (Sierra Club) were unable to participate in the teleconference.

The following items were discussed:

- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. Sustainable Conservation is working with contractors to manage schedules and to continue to explore options to minimize the project schedule. One option that may be available for Bay modeling will be to use a new lower density grid version of the Bay model (which is providing results comparable to the existing higher density grid version) to do long term as well as short term modeling, potentially eliminating the need to develop a separate box model to explore long-term trends.
- Stakeholder Meeting. The Steering Committee continued its planning for and the agenda for the upcoming stakeholder meeting in San Francisco.
- Preparation for Press Contacts. Sustainable Conservation has scheduled calls with individual Steering Committee members to prepare for anticipated press contacts in the next phase of the project.
- E-mail Update. Sustainable Conservation distributed an e-mail to the BPP's e-mail list. This update is part of a plan to provide information to stakeholders more frequently.

### **Anticipated Next Steps**

The Steering Committee upcoming meeting schedule is as follows:

- May 7, Monday, noon—Teleconference meeting
- May 24, Thursday, 10:00 a.m.—Teleconference meeting
- June 7, Thursday, 10:00 a.m.—Teleconference meeting
- June 25, Monday, noon—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, San Francisco Bay Area (location to be determined)

Upcoming activities will also include review of the draft watershed modeling report (anticipated in early June) and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July.

BPP STEERING COMMITTEE TELECONFERENCE  
Monday, April 26, 10:00 am (Pacific Time)

Dial: 866-393-8073  
Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Preparing for press contact (5 min)
- 3) BPP technical studies update: (20 min)
  - a) watershed modeling schedule
  - b) bay modeling grid resolution
  - c) summary of air deposition results
  - d) mini-update
- 4) Planning for the stakeholder conference (20 min)
  - a) agenda
  - b) stakeholder engagement
- 5) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** May 7, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—May 7, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on May 7<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Tim Merkel (AscenZ Friction & Brake)
- Mark Phipps (Federal-Mogul Corporation)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

Chris Shepley (Affinia) and Michael Endicott (Sierra Club) were unable to participate in the teleconference.

The following items were discussed:

- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. The watershed modeling report is now anticipated in mid-June.
- Stakeholder Meeting. The Steering Committee continued planning for how it can ensure good participation in the upcoming stakeholder meeting in San Francisco.
- Preparation for Press Contacts. Sustainable Conservation has scheduled teleconferences with individual Steering Committee members to prepare for anticipated press contacts in the next phase of the project. Geoff Brosseau and I will be having our teleconference on Tuesday May 8.

### Anticipated Next Steps

Upcoming activities will also include review of the draft watershed modeling report and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July. The Steering Committee upcoming meeting schedule is as follows:

- May 24, Thursday, 10:00 a.m.—Teleconference meeting
- June 7, Thursday, 10:00 a.m.—Teleconference meeting
- June 25, Monday, noon—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, Oakland (ABAG)

Sustainable Conservation is in the process of scheduling Steering Committee teleconference meetings in July and August.

BPP STEERING COMMITTEE TELECONFERENCE  
Monday, May 7, noon (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Preparing for press contact (5 min)
- 3) BPP technical studies update: (20 min)
  - a) watershed modeling progress
  - b) bay modeling grid resolution/long term model
  - c) summary of air deposition results
- 4) Planning for the stakeholder conference (5 min)
  - a) stakeholder engagement
- 5) Conference call scheduling for July and August (5 min)
- 6) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** May 24, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—May 24, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on May 24<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Tim Merkel (AscenZ Friction & Brake)
- Mark Phipps (Federal-Mogul Corporation)
- Chris Shepley (Affinia)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

Michael Endicott (Sierra Club) was unable to participate in the teleconference.

The following items were discussed:

- Staffing Change. Sarah Connick will be continuing with the Brake Pad Partnership, but leaving Sustainable Conservation in mid-June (she will continue as a contractor). The project will continue to operate through Sustainable Conservation, where the lead contact will become its Executive Director, Ashley Boren.
- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. The watershed modeling report continues to be anticipated in mid-June.
- Stakeholder Meeting. The Steering Committee continued planning for the upcoming stakeholder meeting in San Francisco, working on the agenda and presentation topics.
- Preparation for Press Contacts. Sustainable Conservation has completed teleconferences with individual Steering Committee members to prepare for anticipated press contacts in the next phase of the project. Sustainable Conservation is working up talking points that the Steering Committee will review in June.

### **Anticipated Next Steps**

Upcoming activities will also include review of the draft watershed modeling report and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July. The Steering Committee upcoming meeting schedule is as follows:

- June 7, Thursday, 10:00 a.m.—Teleconference meeting
- June 25, Monday, noon—Teleconference meeting
- July 30 & August 1—In-person meeting, San Francisco
- July 31—Stakeholder meeting, Oakland (ABAG)

Sustainable Conservation is in the process of scheduling Steering Committee teleconference meetings in July and August.

BPP STEERING COMMITTEE TELECONFERENCE  
Thursday, May 24, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

DRAFT AGENDA

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Preparing for press contact (5 min)
- 3) BPP technical studies update: (20 min)
  - a) watershed modeling progress
  - b) bay modeling grid resolution
  - c) summary of air deposition results
- 4) Planning for the stakeholder conference (20 min)
  - a) agenda
  - b) stakeholder engagement
- 5) Conference call scheduling for July and August (5 min)
- 6) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** June 7, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—June 7, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on June 7<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Tim Merkel (AscenZ Friction & Brake)
- Mark Phipps (Federal-Mogul Corporation)
- Chris Shepley (Affinia)
- Michael Endicott (Sierra Club)
- Jim Pendergast (U.S. EPA)
- Kelly Moran (TDC Environmental)

The following items were discussed:

- Preparation for Press Contacts. Sustainable Conservation is working with its public relations consultant to firm up plans for handling press contacts. The various stakeholder groups will have different plans. BASMAA's plan will recognize our relationships with the Bay Area press. The industry plan will recognize the barriers that industry steering committee members face in speaking with the press (most have company policies forbidding press contact). Sustainable Conservation is working up talking points that the Steering Committee will review later this month.
- Technical Studies. The project management team updated the Steering Committee on the status of the BPP's technical studies. The watershed modeling report continues to be anticipated in mid-June.
- Stakeholder Meeting. The Steering Committee continued planning for the upcoming stakeholder meeting in San Francisco, working on the agenda and presentation topics and content.

### **Anticipated Next Steps**

Upcoming activities will also include review of the draft watershed modeling report and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July. The Steering Committee upcoming meeting schedule is as follows:

- June 25, Monday, noon—Teleconference meeting
- July 5, Thursday, 11 a.m.—Teleconference meeting
- July 13, Friday, 11 a.m.—Teleconference meeting
- July 19 Thursday, 8 a.m.—Teleconference meeting
- July 26, Thursday, 9 a.m.—Teleconference meeting
- July 29 - August 1, Sunday-Wednesday—In-person meetings, San Francisco
- July 31—Stakeholder meeting, Oakland (ABAG)
- August 8, Wednesday, 11 a.m.—Teleconference meeting
- August 23, Thursday, 11 a.m.—Teleconference meeting

BPP STEERING COMMITTEE TELECONFERENCE  
Thursday, June 7, 10:00 am (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

DRAFT AGENDA:

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Preparing for press contact (5 min)
- 3) BPP technical studies update: (30 min)
  - a) watershed modeling status
  - b) bay modeling grid resolution
  - c) summary of air deposition results
- 4) Planning for the stakeholder conference (20 min)
  - a) agenda
  - b) stakeholder engagement
  - c) start time for steering committee meeting
- 5) Anything else?



# MEMO

*For BASMAA Member Agency Internal Use Only*

**TO:** Geoff Brosseau & BPP Representation Work Group **DATE:** June 25, 2007  
**FROM:** Kelly D. Moran **PROJECT:** 16  
**SUBJECT:** Brake Pad Partnership Conference Call—June 25, 2007

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The Brake Pad Partnership (BPP) Steering Committee held a teleconference meeting on June 25<sup>th</sup>. A copy of the agenda is attached. The following people were on the call:

- Sarah Connick (Sustainable Conservation, Facilitator)
- Kirsten Rosselot (Process Profiles, contractor serving as Project Manager)
- Mark Schlautman (Clemson University, project technical advisor)
- Bob Peters (Akebono Corporation and lead representative of the Brake Manufacturer's Council Product Environmental Committee [BMC/PEC])
- Jim Pendergast and Jim Carleton (U.S. EPA)
- Kelly Moran (TDC Environmental)

Tim Merkel (AscenZ Friction & Brake), Michael Endicott (Sierra Club), Mark Phipps (Morse Automotive), and Chris Shepley (Affinia) were not able to participate in the meeting. The following items were discussed:

- Technical Studies. The draft watershed modeling report was delivered and has been distributed to stakeholders. The draft report is available on the BPP web site: (<http://www.suscon.org/brakepad/pdfs/WatershedModelingDraftReport.pdf>). It has been distributed to the scientific advisory team for review (Lester McKee, Robert Abrose, John Sansalone, Ken Schiff, and Wayne Huber). Comments from the advisory team and any stakeholders who review the report are due at **9 a.m. on Thursday July 19<sup>th</sup>**. Conference calls with the scientific advisory team and interested stakeholders are scheduled on Thursday July 26 at 9 a.m. (when reviewers and AquaTerra will discuss and clarify comments on the draft report) and Tuesday August 14 (when AquaTerra will provide verbal responses to reviewer comments).
- Preparation for Press Contacts. Sustainable Conservation is continuing to draft talking points that the Steering Committee will review later this month.
- Stakeholder Meeting. The Steering Committee continued planning for efforts to get important stakeholders to the upcoming meeting in San Francisco. Sustainable Conservation is actively pursuing participation by environmental groups in Southern California, who are key players in the Los Angeles and San Diego copper TMDLs that have challenging compliance timelines.

### **Anticipated Next Steps**

Upcoming activities will also include review of the draft watershed modeling report and Steering Committee coordination and information gathering to prepare information for the Stakeholder meeting in July. The Steering Committee upcoming meeting schedule is as follows:

- June 29, Friday, 9 a.m.—Special teleconference meeting (to discuss charge to reviewers on watershed modeling report)
- July 5, Thursday, 11 a.m.—Teleconference meeting
- July 13, Friday, 11 a.m.—Teleconference meeting
- July 19 Thursday, 8 a.m.—Teleconference meeting
- July 26, Thursday, 9 a.m.—Special teleconference meeting (to discuss comments on draft watershed modeling report)
- July 29 - August 1, Sunday-Wednesday—In-person meetings, San Francisco
- July 31—Stakeholder meeting, Oakland (ABAG)
- August 8, Wednesday, 11 a.m.—Teleconference meeting
- August 14, Tuesday, 9 a.m.—Special teleconference meeting (to discuss responses to comments on watershed modeling report)
- August 23, Thursday, 11 a.m.—Teleconference meeting

BPP STEERING COMMITTEE TELECONFERENCE  
Monday, June 25, noon (Pacific Time)

Dial: 866-393-8073

Meeting Number: \*8893164\*

DRAFT AGENDA:

- 1) Teleconference agenda review, anything new? (5 min)
- 2) Preparing for press contact (5 min)
- 3) BPP technical studies update: (40 min)
  - a) watershed modeling draft report
    - new calls
    - draft charge
  - b) bay modeling grid resolution
  - c) summary of air deposition results/source term results
- 4) Planning for the stakeholder conference (10 min)
  - a) stakeholder engagement
- 5) Anything else?