



President's Letter

A heartfelt thank you goes out to my family, friends, co-workers and colleagues for being so supportive during my recent health issues/challenges. Physically, I have had to admit I am human and that I have limitations. I was never an athlete (always the nerd), but for me working 20 hours a day has had to come to an end --- at least for now. One bright spot has emerged. I have discovered I can be one who asks for help and one who can delegate.

I was reviewing old newsletters as I prepared to write this one and found that it was a year ago that we introduced the Member Profiles. And in that same newsletter we indicated that we would "allow" members to contribute content of interest to the structural engineering community. There has been much more cajoling on the part of yours truly and the Newsletter Editor than permission involved. Sometimes a simple suggestion was all that was needed and in others we resorted to coercion. In either case, we really have appreciated the effort put forth by those of you who have contributed. I have enjoyed the articles and I hope you have too.

Newsletter after newsletter I have asked our members to become involved. Many have answered the call. I have to give a shout out to

some folks that have stepped up their involvement in the last few months. I could not have gotten through the past 20 months as President without Deb Coon as our Administrative Assistant, especially recently when she has also been a good friend and listener. She was invaluable in preparing the bulk of the nomination package for our Engineer of the Year (EOY) nominee. I asked many very busy people to chip in with information and/or recommendations for the nomination package and they all did.

The current board members (you know who they are) have all stepped up to the challenge of getting our house in order before having some major changes --- with two board members leaving this year and three next year. Pretty much since August they have been zipping here and there and everywhere for meetings and more meetings, in addition to board meetings and membership meetings. Just before Labor Day, we asked former board members to assist in any way possible. Some are serving on committees and on state boards. All efforts large and small are appreciated. I often tell my daughter (now a college student) to succeed you need to surround yourself with people who challenge you to do your best and who also root for you to succeed. The

former board members certainly did just that. I feel I have to single out a few and hope, in the process, I will not offend others.

Jeff Tirey has gone above and beyond the call of duty recently. He represented SENH on the EOY panel for the second year. This required him to travel down from the north country in January to Manchester to present our nominee to the panel and to fulfill his 'juror duties'. He volunteered to travel even further the next week to surprise Bob Durfee in front of his co-workers in Nashua with the news that he had won. In between he met with Bob and Steve Johnson to discuss how to update the SENH Bylaws without ever tipping his hand about the EOY. (I would not want to play poker with the man.) Jeff, Bob, and Steve have continued to meet and will have recommended bylaw revisions to the board shortly.

Matt Low is another whose efforts I must recognize. He served on the Nominating Committee with me this year and not only did we bring two very qualified candidates forward to the board, we have begun recruiting for next year too! In addition, he got the UNH

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Special Points of Interest/ Reminders:

- *March Meeting*—Disproportionate Collapse.
- *March Seminar*—Updates on the 2006 IBC & ASCE 7-05 wind provisions with introduction of a Rapid Solutions Methodology for wind developed by SEAW.

President's Letter *Continued*

scholarship formalized and the applications for the student processed by the PR Committee in time (if not quite on schedule) this year. Matt chairs the PR committee that prepared a detailed report which was presented to the board in the fall and a few weeks ago met with the website volunteer/developer Rich Porter, who will act on those recommendations.

Thanks to Rich Porter too! He has been the epitome of volunteerism in the organization. He joined SENH a year ago and at his first meeting volunteered for the PDC. Now he has offered to update and enhance the website. And don't

even get me started on the PDC, you all know what a great job they do! Please thank them the next time you sign in for a meeting. If you missed January's meeting you missed some fantastic food in addition to stimulating dinner conversations and a super presentation!

And then there is the 2008 Engineer of the Year winner Bob Durfee. I had the privilege of extolling his virtues at length in the EOY nomination process. Shortly after returning from his eighth Annual Conference, he brought forth the idea of having NCSEA bring an AASHTO seminar to NH in the spring. I said great, but there has to be coordi-

nation with NHDOT and we need to find a venue, etc. I noted that I could not ask the PDC to be responsible, since they were already planning their own seminar for March. So I delegated Bob to do the leg work for the bridge seminar. And you all know he does much for the organization already, but he did not flinch. I must have asked nicely -- or sounded desperate. Either way, he is handling this matter for our organization.

I feel very fortunate to be serving, as well as being served by, so many capable and talented folks that make up SENH.

Professional Development Committee

The SENH Professional Development Committee has a great meeting and seminar planned for us in March. Look elsewhere in this newsletter for the details. The May meeting has not been finalized.

The PDC welcomes Joshua A. Lund, P.E. of Stantec as a new member. It was not that long ago that we were trying to find people with bridge experience to be on the PDC and now that specialty of our discipline is well represented. It is time for the building folks to step up -- any volunteers?

May is the General Membership Meeting

The Board of Director terms of Linda McNair-Perry and Jim Karmozyn will expire in May. Linda has served one two-year term as Secretary and one two-year term as President. Jim has enthusiastically served for 6 years on the Board as Treasurer, having set up an exemplary set of spread sheets for tracking and reporting our expenditures. He also represents SENH on many outside Committees/Coalitions.

The Nominating Committee brought forth recommendations for the two board openings. Acting on those recommendations, **the Board of Directors formally nominates Tony Coviello, PE of Summit Engineering and Kyle Roy, PE of TF Moran to fill these positions.** Tony has served on the PDC since it was created and has been the chairperson over the last year. Kyle has actively participated on the Public Relations Committee over the last two years.

According to Article VII, Section I, other nominations signed by three (3) or more members may also be submitted and are welcomed. These must be received by the Board of Directors by March 31, 2008.

Sean James Named One of New Hampshire's Top 40 Under 40

For seven years now the New Hampshire Union Leader honors 40 up-and-coming people, all under the age of 40, "who are making a difference in our state". This year SENH Member Sean T. James, P.E., SECB was nominated and recognized for his work on preserving historic covered bridges throughout New England. Congratulations Sean!

New Associate Members & Members

SENH is proud to welcome the following new Associate Members & Members:

Associate Members:

- ◇ Dana Coolbroth, HTA/Kimball Chase
- ◇ James Hall, Jr., McFarland-Johnson, Inc.
- ◇ Jennifer Reczek, Quantum Construction Consultants, LLC

Members:

- ◇ Andrew White, P.E., CCS Constructors, LLC



New Hampshire's Engineer
of the Year
Robert H. Durfee, P.E., SEBC

Robert H. Durfee Named NH Engineer of the Year

Robert H. Durfee, P.E., SECB was honored as the 2008 engineer of the year by the NH Joint Engineering Societies at the Engineers Week Banquet on February 21st. Bob was nominated for the award by the SENH Board of Directors, an organization he helped found. He has been an active member of SENH, serving in many roles including past president and currently serves as our representative to NCSEA.

Bob is a licensed professional engineer with over 30 years of experience in the structural engineering profession. He earned a B.S. in Civil Engineering from Clarkson University and M.S. in Civil Engineering from Vir-

ginia Polytechnic Institute. His professional interests are focused on bridge design and rehabilitation with a specialization in historic bridges. He is a noted author on historic bridges and has authored and presented numerous papers at nationally recognized conferences

Bob has always taken the time to give back to the profession and the community. He served on the Laconia Little League Board of Directors for 13 years and currently serves as a Commissioner for Gunstock Mountain Resort. He has given back to the profession through his involvement in professional associa-

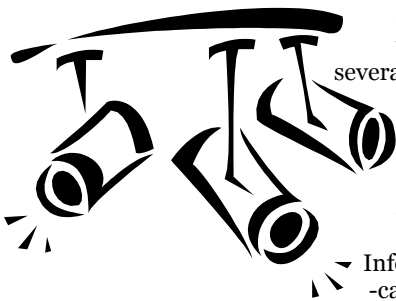
tions, sharing of technical knowledge through paper presentations and through his continued mentoring of young engineers.

Bob resides in Laconia New Hampshire with his wife Joanne and two children Paul and Carolyn. In his free time Bob enjoys skiing, hiking camping, waterskiing and sailing as well as traveling around to see our nations covered bridges.



From left to right are Linda McNair-Perry, SENH; George Fretette, NHSPE; Steve Wolfe, ASCE; Jim Anderson, IEEE; Young Engineer of the Year Liberty Gunter; Governor John Lynch; Engineer of the Year Robert H. Durfee; Jim Errico, ASCE-NH; and Dan Hudson, NHSPE

Member Profiles



SENH first began as an unorganized affiliation of several New Hampshire Structural Engineers in 1993. Our first group meeting occurred on March 23rd with twelve structural engineers attending.

Informal meetings with technical presentations continued to occur. By word of mouth, more and more structural engineers learned of these informal meetings and attendance increased. Finally, a meeting was held in Laconia on February 17, 1994, where the majority of structural engineers in attendance decided to formally organize a structural engineering organization. A Board of Directors was elected and the first Board Meeting occurred on March 23, 1994. Listed below are the members that made up the first SENH Board of Directors:

- Joel B. Fisher, P.E. - President (1994-1997)
- Jeffrey S. Trexler, P.E. - Vice President (1994-1998)
- Jeffrey L. Tirey, P.E. - Director at Large (1994-1997)
- Robert Durfee, P.E., Secretary (1994-1997)
- Fred E. Emanuel, P.E. - Treasurer (1994-1999)

In this section and throughout this newsletter you will find information and a spotlight on each of our founding Board of Directors.

Joel Fisher, P.E. is a founding Board member and president of SENH from 1994 to 1997. He also served on the Snow Loads Committee. Joel currently serves on the NH State Building Code Review Board. He graduated from the University of Miami with BS degrees in Architectural and Civil Engineering. After working for a structural engineering firm in Miami, Joel moved to New Hampshire to work for a multi-discipline engineering firm. In 2004, he founded Fisher Engineering, P.C. His 24 years experience includes design and retrofit of hospitals, retirement homes, public and private schools, university buildings, libraries, industrial facilities, scientific laboratories, water treatment facilities, military installations, commercial buildings, bridges and residential structures. Joel lives in Gilford with his wife Judy and sons Ben and Max. He spends his free time playing tennis, skiing, golfing and trapshooting.

Jeffery Trexler, P.E. is a founding director and former vice president of SENH, and served on the Legislative Committee, Specialty Licensing Committee, and the QBS Coalition. Jeff began his structural engineering career in 1977 after earning an Associate in Engineering degree from NH Technical Institute. After working for L.F. Brown Engineer, Steffensen Engineering Associates, and a subsidiary of Hoyle Tanner & Associates, he started Trexler Engineering in 1986. Working from his home office in the small town of Dunbarton, Jeff provides structural engineering services for the design and construction of new buildings as well as additions and renovations to existing buildings. Clients include architects, building owners, and contractors and projects vary from single family residential to multi-million dollar commercial, municipal and industrial buildings.

In addition to his private practice, Jeff has enjoyed using his engineer's problem solving skills in the public decision making process. He has served the Dunbarton School District as a school board member, chair of the Capital Improvements Committee, and chair or co-chair of building committees for six addition and renovation projects at the local elementary school. He has served the Town of Dunbarton as co-chair of the town center planning and building committees, chair of a space needs committee, and served on the Master Plan Steering Committee. Combining private practice with community service, Jeff has donated structural engineering services for three school additions, renovation of the Town Hall into a library, a fire station addition, and a new compactor facility at the transfer station. Jeff enjoys many outdoor activities including hunting, hiking, camping, skiing, and sporting clays. He and his wife Marcia have two daughters, Jacklyn (13) and Katie (21).

Jeffrey Tirey, P.E., SECB, joined SENH in 1994 as a founding Director and served as the Chairman of the Snow Load Mapping Committee. He holds a BSCE from MIT. After working in the Boston area for about 5 years, including a 1 year break to work at the Mt. Washington Observatory on the top of Mt. Washington, he established his own engineering consulting business north of the NH notches. He has worked on a wide variety of building types including schools, commercial, industrial, medical and residential structures performing new designs, renovations, evaluations and failure investigations. Jeff initiated and conducted a 1994 building code survey for SENH, the results of which led to the formation of the Snow Load Committee. He led the SENH team members of this joint agency effort, which has resulted in the current snow load criteria used in the state today. He has made about a dozen presentations on snow loads to various organizations including NCSEA, SENH, NHBOA, NH-NAHB, and the NE-WTC. He currently resides in St. Johnsbury, VT with his wife and two sons. He has contributed to his communities by serving 15 years on the BOD, as Treasurer and President for the Randolph Mountain Club (RMC); providing pro bono design services for the RMC for two publicly operated mountain cabins at treeline and one valley facility for their trail crew; as a BOD and Budget Chairmen for The Children's House Montessori Preschool; as a BOD and 18 year volunteer on Androscoggin Valley Search and Rescue; as an ice hockey coach with Littleton and Lyndon Area Youth Hockey Associations for 9 years; as a youth lacrosse coach for St. Johnsbury Rec. Dept for 2 years; and as a guest lecturer with St. Johnsbury Academy's and Lisbon High School's "Civil Engineering and Architecture" course. In his spare time, Jeff plays hockey, hikes, paddles and skis.

Fred Emanuel Appointed to NH Manufactured Housing Installations Standards Board

SENH member Fred Emanuel, P.E., has been reappointed by the NH Department of Safety to the Manufactured Housing Installation Standards Board.

Back in 2004, Senate Bill 442 was passed to establish policy principles for NH Installation Standards Program for Manufactured Housing including:

- Establishing uniform state installation standard "to protect quality, durability, safety and affordability of manufactured housing in this state".
- Licensing and training installers of manufactured housing.
- Ensuring compliance through inspections of installations.
- Providing fair and effective recourse for consumers and developing a dispute resolution program for disputes between manufacturers, retailers, and installers.

A new State Board was appointed to regulate industry compliance with NH Law. The 13 member board known as the Manufactured Housing Installation Standards Board operates as a unit of the Department of Safety and includes the following members:

- Commissioner of Safety or designee: Gary Francoeur (Chair).
- 2 public members: Leon Calawa and Albert Akerstrom, III.
- 1 installer nominated by NHMHA: Craig Therrien.
- 1 Structural Engineer or architect nominated by Board of Professional Engineers: Fred Emanuel.
- 1 dealer / retailer nominated by NHMHA: James Baird.
- 1 owner / operator of a community less than 100 lots nominated by NHMHA: Linda Rogers.
- 1 owner / operator of a community over 100 lots nominated by NHMHA: Ken Burgess.
- 1 member of a cooperative manufactured housing community nominated by MOTA: William Baird.
- 1 municipal fire chief nominated by the NH Association of Fire Chiefs: Tim Morrison.
- 1 Civil Engineer nominated by the Board of Professional Engineers: Ruben Hull.
- 1 manufactured homeowner nominated by MOTA: vacant.

Fred Emanuel's term expires on November 26, 2009.

The board holds meetings approximately every 90 days or as deemed necessary. Since its inception, the Board has performed the following tasks:

- Published manufactured housing installation standards.
- Conducted training seminars to adequately license and train manufactured housing installers.
- Received applications and issued licenses to more than fifty installers.
- Has held hearings relative to installation standards and resolution of disputes.

The installation standards apply to all new and relocated manufactured housing that is used as a residential dwelling. Adoption of the organization rules of The Manufactured Housing Installation Standards Board Inst 100 became effective on December 24, 2005.

Inspections are performed by the local enforcement agency or if there is no local enforcement agency, the State Fire Marshall's designee shall conduct appropriate inspections. Once the installation is approved, the authority will issue a certificate of compliance prior to occupancy.

A consumer, park owner, manufacturer, retailer, or installer of manufactured aggrieved or having a dispute regarding the installation of a manufactured house may file a complaint with the board at the Department of Safety.

STRUCTURAL ENGINEERS OF NEW HAMPSHIRE ASSISTS TWO FUTURE STRUCTURAL ENGINEERING STARS

The SENH Public Relations Committee is pleased to announce that for the second year in a row, SENH has awarded \$500 scholarships to two very deserving UNH civil engineering students focusing their studies on structural engineering. Mr. Seth R. Lizotte and Mr. Ryan L. Kline will each receive a scholarship to assist with the financial burdens of pursuing their degrees. Mr. Lizotte is a junior from Claremont, NH with a cumulative GPA of 3.96 (those 3 nagging A- grades are all that stand between him and a perfect 4.0). At this time, he plans to be exploring structural engineering careers related to environmental structures or possibly transportation structures. Mr. Lizotte is currently scheduled to obtain a BSCE in May 2009 and then pursue graduate school opportunities. He is actively seeking an internship for this upcoming summer and can be reached at sre4@cisunix.unh.edu.

Mr. Kline is also a junior with a 3.68 GPA with a significant time commitment to his country through the ROTC program. Upon graduation from UNH in May 2009, Mr. Kline will be returning to active military duty in the Aviation Branch of the US Army as a 2nd Lieutenant. The commitment is for 6 years, after which, Mr. Kline intends to pursue graduate school focusing on structural engineering.

We are very pleased to be of assistance to these promising students.

Respectfully Submitted,

Matthew J. Low, P.E., SECB, Public Relations Committee Chairperson

CAREER FAIR

Tony Coviello and Linda McNair-Perry attended the **UNH Engineering, Science and Technology Career and Internship Fair on February 27th**. Talking with students and discussing what SENH has to offer. We continue to encourage our members to consider hiring UNH students for formal or informal internships .

STEEL BRIDGE COMPETITION UPDATE

UNH Students are in the process of fabricating their bridge for the ASCE/AISC Student Steel Bridge Competition (SSBC). Around a dozen New England and Canadian universities will compete at the regional competition to be held at the UNH Whittemore Center on Saturday April 5th. The public is welcome to attend.

The UNH team this year has Professor Erin Bell, Ph. D. as their faculty advisor and A. Gosselin Steel Inc of Auburn, NH to assist in the fabrication of their design. The co-captains of the team are Norm Losh and Mick McGurl. The regional competition organizer is Gary Lemay. The other team members include Trevor Knott, Aaron Mockrish, Andrew Perry, Dave Gaylord, Courtney Goldstein, Kevin Daigle, Chris Pavelco and Mike Chervinsky.

The student-driven bridge designs are judged on looks (style points count, but not for much) and then rated on strength and efficiency. The structural elements must meet STRICT specifications for size and connection limitations and the structure is load tested. If the specifications are not followed, there are very big penalty points assessed. The design that optimizes performance (load supported vs. weight of structure) and economy (efficiencies in construction & weight of material) usually wins.

SENH has been asked to help find 7 engineers to judge the regional competition. There are already some hardy souls who have volunteered to put in a full day on Saturday, but we could use some more. If you are ready to sign on the dotted line contact Linda McNair-Perry at lperry@sfceng.com who judged a number of years ago or Tony Coviello at tony@summitengineeringinc.com who previously competed. If you want more info please contact the head judge, Jon Hamann at jhamann@cives.com. It will be a fun and rewarding experience for the students and the judges.

In addition, there is a paper competition that is in need of some volunteer judges. It will be held as part of the Student Business Conference on the Friday before the competition, April 4. The UNH students would like to have two judges to "grade" the papers during the week preceding the Business Conference. Those judges would then attend a meeting on Friday April 4th at 6 PM on Kingsbury Hall where all the teams that are competing will make presentations. The judges will be given recommended scoring sheets. **If you are really enthusiastic you can sign up to do both.**

Finally, if any of the judges have a long commute, UNH has reserved rooms in the New England Center for \$99/room. Gary Lemay needs to submit the final room list by March 18, so if any judges would like a hotel room at the New England Center, please contact him at gsl2@cisunix.unh.edu before then.



SENH MARCH MEETING ANNOUNCEMENT

NEXT MEETING: March 18, 2008

PRESENTATION: **“Disproportionate Collapse”**, by Ed Huston

IBC requirements in the post 9/11 environment “What has been proposed to prevent disproportionate collapse of (almost) all buildings and NCSEA's response to those proposals.”

Ed Huston, PE will discuss NCSEA's Structural Integrity International Building Code change proposals. Ed will talk about the Oklahoma City bombing and other building collapses.

After their World Trade Center investigation, National Institute for Standards and Technology made recommendations including Code Change Proposals to address disproportionate collapse. These Code Change Proposals would have created an intolerable environment for Structural Engineers in terms of being able to conform to the code and in terms of legal liability. This is a crucial issue for structural engineers that our profession must address and one which will change many of our designs.

PLACE: **The Executive Court Banquet Facility at The Yard Restaurant**
1211 South Mammoth Road, Manchester, NH.
Phone 623-3545
www.theyardrestaurant.com

DIRECTIONS: I-93 to exit 5. Head West on Rt. 28 North for 3 miles. Enter at the Best Western Executive Court Inn on the right.

AGENDA: 5:30 pm-6:30 pm Social Hour
6:30 pm-7:15 pm Dinner
7:15 pm-7:30 pm Business Meeting
7:30 pm-9:00 pm Presentation

DINNER: Buffet choice of Tortellini, Roasted Salmon, Pork Loin.

COST: Member: \$45.00 Non-Member: \$50.00 Full Time Student: \$10.00

RSVP: by Friday, March 14, 2008

Please send check payable to “Structural Engineers of New Hampshire” with list of attendees to:

SENH
P.O. Box 226
Manchester, NH 03105-0226
Contact: Deb Coon, Administrative Assistant
dcoon@hta-nh.com

NOTE: 2.0 PDHs have been assigned for attendance to this program. Attendees are responsible for ensuring their check-in on the attendance list upon arrival at the meeting.

SENH January 23rd Meeting Minutes

Business Portion of the Meeting

I. BUSINESS PORTION OF MEETING:

The meeting was called to order by Linda McNair Perry, P.E, at 7:00 pm, after the social time and dinner.

1. Treasurer's Report: Jim Karmozyn, PE distributed a copy of the 2007 Treasurer's report to all the tables. The ending budget balance for 2007 was \$12,500. The actual ending balance was \$14,650.30. The 2008 budget was also noted. He addressed the 2007 income statement on page 2, the expensed report on page 2, and the meeting and seminar income and expenses of page 4.
2. Board Members: Linda McNair-Perry reiterated that two board members are retiring in May and need to be replaced. She mentioned that a nominating committee was formed to help select the replacement. Any member wishing to serve is encouraged to contact a member of the nominating committee – Linda and Matt Low.
3. New Members: Jason Lodge and Philip Savoy have joined SENH as a member. Jennifer Reczek, EIT has joined as an associate member.
4. NCSEA Annual Conference: Bob Durfee mentioned that a two day seminar featuring seismic design for the 2006 IBC regions of low and moderate-seismicity is being offered at the Feb 29 Winter Institute in Texas. NCSEA website has a new career center. Positions or resumes may be posted. Posting career positions have a monthly fee, but resumes may be posted for free. Bob congratulated the membership for placing structural posters in high schools through out New Hampshire. There are a few posters left for schools and libraries if any one is interested. He is getting more.
5. Bob Durfee is being honored as Engineer of the Year on February 21 during the New Hampshire annual engineering banquet.
6. SENH and NHSPE is being represented at the UNH Job Fair. If any one has an interest concerning this event, please contact Linda McNair-Perry, Alex Azodi, or Matt Low.
7. Professional Development Committee: Tony Coviello, the Chairman, is asking for volunteers to join the committee. The position has great professional rewards, but does not entail much work. Most communication is done by e-mail with few meetings needed.

NHDOT Update: *by Mark Richardson, PE, from the NH Department of Transportation*

Mr. Richardson gave an update on the status of NH bridges and discussed the current NHDOT ten-year plan as it affects bridges.

Mark began by presenting a photograph of three bridges traversing the Piscataqua River in Portsmouth, NH. The bridges are the Memorial Bridge (US Route 1), the Sarah Mildred Long Bridge (US Route 1 Bypass), and the Piscataqua River Bridge (I-95). Both the Memorial Bridge and the Sarah Long Bridge are on the state Red List as being structurally deficient. Structurally deficient does not mean the bridge is in immediately danger of collapse. Rather, it is considered to be "structurally deficient" and is placed on the Red List if one or more of its structural elements (girder, stringer, deck, pier, abutment, etc.) have an inspection rating of "4" or less, with "9" being a "perfect" bridge and "0" being a "closed" bridge. These bridges are currently open and in use, with a 20-Ton posting restriction on the Memorial Bridge. The Sarah Long Bridge and the I-95 bridge have no

posting restrictions.

A "bridge" as defined in state law is any span 10 feet or greater. A federal-definition bridge has a span of 20 feet or greater. There are 2,120 State owned bridges. Of those bridges, 142 are on the Red List (about 6.7%). There are 1,640 Municipally owned bridges. Of those bridges, 363 are on the Red List (about 22%). In total there are 3,760 bridges total statewide of which 505 are on the Red List (about 13.4%).

Bridge Inspections

All bridges (state and municipal) are inspected at least once every two years in accordance with the National Bridge Inspection Standards (NBIS). State Red List bridges are inspected twice a year. Municipal Red List bridges are inspected once a year. More frequent inspections are performed whenever needed.

Bridge Inspection Teams

NHDOT bridge inspections are performed by four teams of Bridge In-

spectors (two Inspectors per team). Specialized training for bridge inspection methods is provided (2-week FHWA approved course). All NHDOT Bridge Inspectors and Supervisors have completed all required training, and meet all the applicable qualifications for performing bridge inspections. Refresher training is provided at regular intervals. Inspection data is obtained in the field and entered into laptops, including digital photos, and downloaded to the Bridge Design office in Concord. The Department uses PONTIS Bridge Management Software, developed through AASHTO.

Inspection Results and Structural Deficiencies

Any/all deficiencies that could affect public safety are immediately communicated to the Bridge Design office for response, such as bridge closure, reduction in load posting of the bridge, or repair/reconstruction.

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A deficient concrete bridge deck may be deteriorating but will continue to safely carry traffic. Exposed steel reinforcing indicates a deficiency but generally does not result in a structural failure prior to repairs being performed. All NH bridges are currently considered safe for continued use by the traveling public in accordance with applicable load limit postings and current laws and regulations.

DRAFT 2009-2018 TEN YEAR PLAN

89 State-owned Red List bridges are in the Draft Ten Year Plan (TYP) or are under construction.

22 State-owned Red List bridges will be addressed by Bridge Maintenance.

9 State-owned Red List bridges are awaiting municipal action (bridges over railroads serving municipal roadways).

12 State-owned bridges will always be on the Red List (historic/covered bridges, etc.).

10 State-owned Red List bridges awaiting inclusion in the program (low priority, less traffic, non-primary roadways).

142 State-owned Red List bridges (total).

Estimated construction cost (2007 dollars) to replace or rehabilitate only the Red List bridges is \$350 M for state Red List bridges and \$250 M for municipal Red List bridges or \$600 M total.

"Near Red List"

These bridges have one or more structural elements having a condition rat-

ing of "5", and thus are considered to be one inspection away from being added to the Red List.

264 state bridges are on the "Near Red List".

291 municipal/other bridges are on the "Near Red List".

555 total bridges are on the "Near Red List"

Past Progress and Current Trends

In 1993 there were 198 state bridges on the Red List. Since then 272 state bridges have been removed from the Red List, but 211 state bridges have been added to the Red List, resulting in a 61 reduction (net) in state Red List bridges in 14 years.

In 1993 there were 477 municipal bridges on the Red List. Since then 282 municipal bridges have been removed from the Red List, but 169 municipal bridges have been added to the Red List, resulting in a 113 reduction (net) in municipal Red List bridges in 14 years.

State bridges were on the Red List for an average of 5 years before being addressed. Now, state bridges currently on the Red List have been there for an average of nearly 8 years. It is taking longer to address Red List bridges.

CLOSED, POSTED, AND LOAD RESTRICTED BRIDGES

331 state bridges require restricted/reduced load capacity (24 for tonnage, 307 for certified vehicle restrictions).

10 state bridges are closed (1 closed, on Red List; 9 bypassed not on Red List, no traffic).

994 municipal bridges require restricted/reduced load capacity (205 for tonnage, 699 for certified vehicle restric-

tions). 100 municipal bridges are closed (34 closed, on Red List; 66 bypassed not on Red List, no traffic)

Other Issues

Transportation infrastructure continues to deteriorate. Funding is considered to be inadequate to address current and anticipated future needs. Ensuring public safety is a growing concern as exemplified by the Minnesota Bridge Collapse on August 1, 2007. Bridge inspection, maintenance, rehabilitation, and replacement continue to be a high priority for the Department.

NHDOT Bridge Design - Update

Turnpike toll increase allows Spaulding Turnpike expansion to proceed; other Red List bridges on the Turnpike system will also be addressed. Betterment Program procuring bonds to address infrastructure needs, including Red List bridges. I-93 final design and initial construction projects move forward; financial constraint a problem. Consultant selection for the Spaulding Turnpike & Little Bay Bridges is proceeding (RFPs and interviews). Memorial Bridge final design is nearly complete (NHDOT #1 bridge priority).

The current ten year plan chart was displayed and reviewed. The Bridge Design Manual is being update. All new bridge designs are to be performed according to AASHTO LRFD Specifications. Bridge ratings will follow suit by around 2010.

Bridge Location Maps – being printed (\$65±?) and available on line:

<http://www.nh.gov/dot/bureaus/bridgedesign/ListofTownsforBridgeMaps.htm>

Technical Presentation: *"Short and Median Span Pre-Engineered Bridge Options", by Tom Hennessey & Phil Colflesh of Contech*

New Hampshire is like other New England states regarding bridges. New England is the worst area for bridges.

CONTECH consists of four divisions; Bridge Solutions, Drainage Solutions, Earth Stabilization and Storm Water Solutions. CONTECH Bridge Solutions offers a choice of structural plate, precast concrete arch and truss bridges for vehicular and pedestrian needs.

Structural Plate products include MULTI-PLATE®, Aluminum Structural Plate, Aluminum Box Culverts, SUPER-SPAN™ and SUPER-PLATE® bridge solutions.

MULTI-PLATE® structures, consist of field bolted galvanized steel plates. It is arranged and curved to make a variety of shapes, including round, pipe-arch, arch, ellipse (horizontal and vertical), and underpass shapes.

Aluminum Structural Plate provides all the advantages of steel MULTI-PLATE plus, its light weight adds to the ease of installation compared to other structures.

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Aluminum Box Culverts are a practical and cost-effective solution for small bridge replacement. The wide-span, low-rise shapes are lightweight as well as fast and easy to install.

SUPER-SPAN™ structures utilize MULTI-PLATE® plates and special features that allow for a different and large family of shapes. With spans up to 50 feet, SUPER-SPANs are some of the most widely accepted long-span, corrugated steel bridge structures in the world. Shapes include the Low Profile Arch, High Profile Arch, Horizontal Ellipse, Pear and Pear Arch.

SUPER-PLATE® structures are long span structures, similar to the SUPER-SPAN™, but with basic plate material consisting of aluminum rather than steel. These structures add both thrust beams and reinforcing ribs to conventional aluminum structural plate to achieve larger sizes. Available shapes include low and high profile arch and horizontal ellipses.

The process for structural plate is as follows. The plates are shipped on flat-bed trailers and ready for structure assembly at the jobsite. Stable bedding is prepared which consists of well-graded granular material. The bedding can be pre-shaped with invert structures to ensure proper support in the pipe haunch areas. An unbalanced channel is cast into the strip foundations to receive the plate. After the cast-in-place concrete cures, the plate assembly can begin. The plates are bolted together in the field, typically with a few men on the crew and some small equipment.

Precast modular concrete include the CON/SPAN's and BEBO line. CON/SPAN's distinctive arch action utilizes fast, set-in-place construction. The BEBO® Concrete Arch System is a combination of cast-in-place concrete footings, precast arch elements, headwalls, and wingwalls.

The BEBO Concrete Arch System developed in Switzerland is a precast concrete version of the arches used in Roman aqueducts built two millennia ago-which are still standing. The system uses the fundamentals of soil-structure interaction to achieve superior strength and stability

The process for assembly of the modular concrete bridges is similar to the structural plate process. At the plant reinforcing cages are pre-assembled to meet site-specific requirements. Entire structures are shipped, ready for installation. Strip footings or slab base can be either cast in place or precast. Commercial joint wrap is applied as a seal between precast units. Setting of precast wingwalls and headwalls completes the bridge. Structure stiffness and vertical walls of unit allow backfill to be placed rapidly and effectively.

The prefabricated Steadfast Vehicular Truss Bridges and Continental® Pedestrian Truss Bridges are another durable and aesthetic solution. Modular, prefabricated construction means fast installation and substantial cost savings. A truss bridge is typically delivered and installed in one to three days, without the need for field welding. CONTECH truss bridges combine classic bridge design and construction that is customized and manufactured to specifications.

The greatest opportunity to realize the economics and benefits of using a CONTECH bridge solution is during the conceptual stage of the project. Information needed is a site plan and profile, available height, roadway width and side slopes, right of way, site features, hydraulic and live loading requirements. During the presentation, numerous examples of the various system and applications were shown through out NH and the USA. Single cell openings or channels present fewer problems with debris and maintenance than multiple pipe or channel openings.

2.0 PDHs for the technical presentation were earned by attendees.

Respectfully submitted by Robert S. Busby, P.E., Secretary, SENH

Free Webinar on Seismic Performance of Bridge Systems

On March 25, 2008, a free 90 minute online webinar will outline new research and its practical implications on Seismic Performance of Bridge Systems. The Network for Earthquake Engineering Simulation (NEES) and the Earthquake Engineering Research Institute (EERI), is sponsoring this webinar. Topics covered will include:

- How bridge components were tested at various facilities, and results were aggregated through hybrid testing technologies
- Soil-structure effects at the footings and the abutments
- Abutment-superstructure interaction and effect on bridge piers
- The relative performance of components, bridge piers, and bridge systems
- The effectiveness of new fiber composite piers and column plastic hinges
- How the bridge model performed relative to current design assumptions and philosophies

*You can participate in this training session via WebEx at noon EDT and again at noon PDT on Tuesday, March 25, or download the broadcast at any point after that date. **To participate, you must preregister at www.nees.org.** If you have any questions about the presentation, please contact Kathy Booth at 510-847-5332 or by email at: kathy.booth@nees.org.*

Attendance List

Short and Medium Span Pre-Engineered Bridge Options (2.0 PDH's)
The Grappone Conference Center, Concord, NH
January 23, 2008

| Name | Organization | Name | Organization |
|----------------------------|--|---------------------------|-----------------------------------|
| Joe Allwarden, P.E. | Maguire Group, Inc. | Jay Jennato | |
| Shannon Beaumont | CLD, Inc. | Steve W. Johnson, P.E. | NHDOT |
| Paul M. Becht, P.E. | H. L. Turner Group | James Karmozyn, P.E. | H.E. Bergeron Engineering |
| Josif Bicja | Hoyle, Tanner & Assoc., Inc. | Henry Kunhardt, PE | Sandford Survey |
| Robert S. Busby, P.E. | Kalwall Corporation | Aaron M. LaChance | Stantec Consulting |
| John Byatt, P.E. | CLD, Inc. | Ray Lavery | John Turner Consulting, Inc. |
| Darren Conboy | Jacobs, Edwards and Kelcey | Robin LeBlanc | John Turner Consulting, Inc. |
| Normand G. Cote, P.E. | NGC Structural, LLC | Laurent Levesque, P.E. | J.G.E. Enterprises |
| Tony Coviello, P.E. | Summit Engineering, PLLC | Jason Lodge, P.E. | Hoyle, Tanner & Assoc., Inc. |
| Phil Creamer, P.E., | Contech | Matthew J. Low, P.E., | Hoyle, Tanner & Assoc., Inc. |
| Chris Cucco | Maguire Group, Inc. | Josh Lund, P.E. | Stantec |
| Jonathan Dollard, PE | Enel North America | Robert D. Madore | WR Grace & Co. |
| G. Keith Donington, P.E. | Parsons, Brinckerhoff, Quade & Douglas | Gerald Maher | |
| Nate Dumas | S.W. Cole Engineering, Inc. | Kenneth G. Marshall, P.E. | Foley Buhl Roberts & Assoc., Inc. |
| Robert H. Durfee, P.E. | Dubois & King, Inc. | Lisa M. Martin, P.E. | Quantum Construction Consultants |
| Steven Dylingowski | Parsons | John K. Maynard, P. E. | Maguire Group, Inc. |
| Fred Emanuel, P.E. | Emanuel Engineering, Inc. | Donald F. Mayo, P.E. | Donald F. Mayo, P.E. |
| David F. Emanuel, P.E. | Emanuel Engineering, Inc. | Chad B. Michaud, P.E. | S.W. Cole Engineering, Inc. |
| Marc Fradette | | Michael Mozer | Parsons |
| Roger W. Gayer, P.E, | Structures Unlimited, Inc. | Linda McNair Perry, P.E. | SFC Engineering Partnership, Inc. |
| Dan L. Gelinis, P.E., | Gelinis Strucutral Engineering, LLC | Jennifer Reczek | Quantum Construction Consultants |
| Charles "Tut" Gillen, P.E. | H.E. Bergeron Engineering | Mark Richardson, P.E. | NHDOT |
| Anna E. G. Giraldi | Quantum Construction Consultants | Timothy L. Schaal, P.E. | Schaal Engineering, P.C. |
| Paul Goldberg, P.E. | Pro Con, Inc. | David Sleeper | Enel North America |
| Carl L. Goldknopf, P.E. | GV Engineering, LLC | Jim Spaulding | H. L. Turner Group |
| Timothy L. Grant, P.E. | | Trevor Stanley | Parsons |
| Gary Hall | Parsons | Miles P. Stetson | University of New Hampshire |
| Steven B. Halloran, P.E. | Jacobs, Edwards and Kelcey | Johnathan B. Truebe, P.E. | Lakeside Engineering, Inc. |
| Jaime Harned | CLD, Inc. | Frank Vitale | Parsons |
| Robert S. Hartford, P.E. | Kalwall Corporation | Edward Weingartner, P.E. | Hoyle, Tanner & Assoc., Inc. |
| Tom Hennessey | Contech | John J. Wilson, P.E. | Jacobs, Edwards and Kelcey |
| Tim Hodgdon | H. L. Turner Group | Steve Wolf | Contech |
| Sean James, P.E. | Hoyle, Tanner & Assoc., Inc. | | |

Additional Meetings & Conferences

January—June 2008 UNH Engineering Management Workshops for more information and a list of workshop topics please visit <http://www.learn.unh.edu/pcw/pd/sched.php?id=95>

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March 19, 2008 SENH Seminar Updates on the 2006 IBC & ASCE 7-05. Contact Deb Coon for more information at dcoon@hta-nh.com

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April 2-5, 2008: NASCC: The Steel Conference, Nashville, TN. To view the full program or to register, please visit www.aisc.org/nascc. SENH Vice President Alex Azodi has a **complimentary certificate**. The certificate covers the full registration for the conference which offers more than 60 technical sessions, short courses, and keynote speeches and is an educational event for structural engineers, fabricators, erectors, and detailers. In addition to an extensive trade show featuring latest products and services, sessions generally offer practical information and the latest design and construction techniques. It is an opportunity to learn the latest techniques and developments in the world of steel. There are usually around 3000 attendees. If interested you may contact Alex for more insight at omegaengineering@tds.net

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April 3, 2008: CONCRETE CONSTRUCTION CONFERENCE at the Lake Morey Resort, Fairlee, VT. Admission is free. For more information, please contact Jane @ 603-863-1000 or go to www.CarrollConcrete.com

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April 24, 2008: SFNE Membership Meeting, Publick House, Sturbridge, Mass, for more information please visit <http://www.ssfne.org/>.

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May 22, 2008: Annual WPI Steel Design Conference, Worcester, MA. for more information please visit <http://www.ssfne.org/>.

CORRECTION:

On the NCSEA Newsletter for February 2008 that was distributed to the Membership via email:

The webinar with Larry Griffis was dated incorrectly as April 17th.

*The correct date for Designing Buildings for Wind Load Design by ASCE -7-05 is **April 16th***



**P.O. BOX 226
MANCHESTER, NH 03105-0226**

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