



Public Facilities Committee Agenda

City of Newton In City Council

Monday, January 4, 2016

7:30 PM
Room 205

Items Scheduled for Discussion:

- #354-15 **Appt to the Energy Commission by the President of the City Council**
MICHAEL GEVELBER, 166 Melrose Street, Auburndale, reappointed as a member of the ENERGY COMMISSION to fill the remaining term of John Bliss, which expires on December 31, 2017. [12/14/15 @12:08 PM]
- #353-15 **Appt to the Energy Commission by the President of the City Council**
JAMES PURDY, 943 Chestnut Street, Newton Upper Falls, reappointed as a member of the ENERGY COMMISSION for a term to expire on December 17, 2018. [12/14/15 @12:08 PM]

Items Not Scheduled for Discussion at this meeting:

Referred to Programs & Serv, Public Facil, and Finance Committees

- #357-15 **Request for CPA funding for the Newton Highlands Playground**
COMMUNITY PRESERVATION COMMITTEE recommending the appropriation of two million five hundred thousand dollars (\$2,500,000) from the Community Preservation Fund's open space and general reserves or fund balance to the Parks & Recreation Department, for the rehabilitation of the Newton Highlands Playground at Winchester and Dedham Streets, as described in the proposal submitted to the Community Preservation Committee in November 2015. [12/15/15 @ 12:32 PM]
- #313-15 **Request for an update on the Second Water Meter Program**
ALD. LAPPIN requesting an update from the Department of Public Works on the second water meter program including: the progress of the inspection and programming of the approximately 900 new outdoor irrigation meters provided by the City to property owners that have yet to be inspected and/or programmed by the City; the process going forward for the issuance, inspection, programming and tracking of second meters; and the notification of residents who already had second meters regarding the process for registering their meters. 10/26/15 @ 7:15 PM]

The location of this meeting is handicap accessible and reasonable accommodations will be provided to persons requiring assistance. If you need a special accommodation, *please contact Jini Fairley, at least two days in advance of the meeting: jfairley@newtonma.gov, or 617-796-1253. For Telecommunications Relay Service dial 711.*

Referred to Finance and Appropriate Committees

- #288-15 **Submittal by the Mayor of the FY17 Capital Improvement Plan**
HIS HONOR THE MAYOR submitting the FY 2017-FY 2021 Capital Improvement Plan pursuant to section 5-3 of the Newton City Charter. [10/01/15 @ 1:53 PM]
- #237-15 **Update on mitigation funds from Special Permits in Newton Centre**
ALD. CROSSLEY, LAREDO, and SCHWARTZ requesting an update on funds accrued from voluntary contributions from Special Permits in Newton Centre, which can be made available to complete a safe pedestrian crossing at 714-724 Beacon Street via Special Permit Board Order #1-15 and conditions noted therein. 09/14/15 @ 10:40 AM]

Referred to Public Facilities and Finance Committees

- #223-15 **Discussion on the process of licensing the use of city buildings**
ALD. LAREDO requesting a discussion of the process of licensing the current and future use of city building, including: (a) how licensees may request the use of city buildings; (b) the process for determining which licensees will get the use of city buildings; (c) how the fees for the use of city buildings are set; and (d) how the current process compares to the process for permitting the use of school buildings. [08/13/15 @ 11:20 AM]

Referred to Programs & Services and Public Facilities Committees

- #201-15 **Discussion regarding the condition of the Kennard Estate building**
ALD. SANGIOLO requesting a discussion with the Commissioner of Public Buildings, the Commissioner of Parks and Recreation, and the Executive Department regarding the condition of the property located at 246 Dudley Road (Kennard Estate) and how much, if any, repairs and upgrades will be needed as the City relocates the Parks and Recreation Department to that location. [09/01/15 @ 4:00 PM].
- #200-15 **Update on the strategic plan for street and sidewalk improvements**
ALD. LAREDO requesting that the Department of Public Works provide an update on the creation of a strategic plan for the improvement of streets and sidewalks in the City. [08/13/15 @ 11:20 AM]

Referred to Programs & Services and Public Facilities Committees

- #141-15 **Discussion on tracking and improving the condition of the gas utility infrastructure**
ALD. BROUSAL-GLASER, SANGIOLO, HESS-MAHAN, COTE, NORTON AND ALBRIGHT requesting a discussion with the Director of Urban Forestry, a representative of the Department of Public Works and a representative of the Law Department about tracking and improving the condition of the gas utility infrastructure in Newton, new state statutes governing infrastructure repairs, coordination of increased repair work with city operations, the status of negotiations with National Grid to

compensate for tree deaths resulting from gas leaks, and the possibility of creating a utilities working group to monitor progress on these and related issues. [05/26/15 @ 2:52 PM]

- #133-15 **Authorization to negotiate leases for install of solar panels on city properties**
HIS HONOR THE MAYOR requesting authorization to enter into negotiations for the potential lease on city properties for purposes of third-party construction, ownership, and operation of on-site renewable solar energy generation from which the City will purchase electric output and/or net metering credits. [05/11/15 @ 5:00 PM]
ITEM SPLIT INTO PART A AND PART B
PART A – APPROVED on 11/16/15
PART B – *Solar panels mounted on new carport structures at Newton South High School and solar panels mounted on new carport structures at the Library.* HELD on 011/04/15

- #100-15 **Discussion on pursuing municipal aggregation of energy purchasing**
ALD. NORTON, SANGIOLO, LEARY, AND ALBRIGHT requesting that the Administration pursue municipal aggregation of energy purchasing with the goals of reducing and/or stabilizing electricity costs for resident, businesses and the City; and requiring the purchase of Class 1 RECs at some percentage above the level required by the Massachusetts Renewable Portfolio Standard. [04/06/15 @ 9:12 AM]

- #83-15 **Discussion and update on energy items**
ALD. CROSSLEY, GENTILE, & ALBRIGHT requesting a discussion and update from the Administration on the following energy related items: status of municipal power purchasing contracts for gas and electricity; status of the Power Purchase Agreement including solar PV rooftop installations, power offset (cost benefit) to date and review of potential future projects; and an update on municipal energy consumption including the recent Green Communities report filed with the Department of Energy Resources. [03/26/15 @ 9:19 AM]

Referred to Public Facil, Programs & Serv, and Public Safety & Trans Committees

- #46-15 **Discussion of parking options for school and municipal parking lots**
ALD. JOHNSON & CICCONE, requesting a discussion with the Commissioner of Department of Public Works and the School Department to determine and discuss parking options including use of school properties based on the current municipal parking lot programs including the issuance of permits. [02/11/15 @ 1:35 PM]

Referred to Public Facilities and Finance Committees

Public hearing assigned for February 3, 2016

- #455-14 **Ordinance Amendment to create a storm water rate fee structure**

HIS HONOR THE MAYOR recommending amendment to Chapter 29, Section 80 **Sewer/Stormwater use charge.** of the City of Newton Ordinances to create a storm water rate fee structure based upon square footage of impervious surface area.

#328-14 **Review of double utility poles**

ALD. ALBRIGHT, DANBERG, & LAREDO requesting a review of double poles in Newton including a random sampling of ten double poles on the north side and ten double poles on the south side of Newton to determine which utility is holding up the removal of double poles. [08/19/14 @ 9:16 AM]

#189-14 **Update on the Zervas School construction project**

PUBLIC FACILITIES COMMITTEE requesting periodic updates on the Zervas Elementary School Project. [04/17/14 @ 10:48 PM]

#188-14 **Update on the Cabot School construction project**

PUBLIC FACILITIES COMMITTEE requesting periodic updates on the Cabot Elementary School Project. [04/17/14 @ 10:48 PM]

Referred to Programs & Services and Public Facilities Committees

#119-14 **Discussion with ISD on plans to address City non-compliance with ADA standards**

ALD. ALBRIGHT AND CROSSLEY requesting discussion with the Inspectional Services Department to explain the development of short and long term plans to identify and correct buildings, sidewalks, playgrounds, etc...that do not conform to American Disability Act (ADA) standards. The discussion should include information on how improvements will be incorporated into the Capital Improvement Plan or if less than \$75,000 into a comprehensive budget plan to correct ADA deficiencies. [03/12/14 @ 4:18 PM]

#131-13 **Updates and discussion on the sewer, water and storm water systems**

ALD. CROSSLEY, FULLER, SALVUCCI, JOHNSON, CICCONE requesting periodic updates and discussion, at the discretion of the members of the Public Facilities Committee or the Commissioner of Public Works, on the condition functioning, operations and management of all elements of the City sewer, water and storm water systems including the following:

- Water meters
- Implementation of the ten project area strategic plan to remove infiltration in the City sewer system
- Implementation of the long range strategic plan to repair and replace City water mains, especially to correct for fire flow
- Status of the City's Private Inflow Removal Program to resolve and disconnect illegal storm water connections to the City sewer system
- Current billing practices
- Rates analyses needed to facilitate an informed comparison of billing options to include the following options either alone or in combination: seasonal rates, second meters, tiered rates, frequency of billing, low income credits.

Referred to Finance and Appropriate Committees

- #257-12 **Review of Fees, Civil Fines/Non-criminal Disposition in Chapter 17 of the ordinances**
RECODIFICATION COMMITTEE recommending (1) review of the Fees, Civil Fines/Non-Criminal Disposition contained in Chapter 17 LICENSING AND PERMITS GENERALLY and Chapter 20 CIVIL FINES/NON-CRIMINAL DISPOSITION CIVIL FINES to ensure they are in accordance with what is being charged and (2) review of the acceptance of G.L. c. 40 §22F, accepted on July 9, 2001, which allows certain municipal boards and officers to fix reasonable fees for the issuance of certain licenses, permits, or certificates.
FINANCE VOTED NO ACTION NECESSARY 7-0

Referred To Programs & Services And Public Facilities Committees

- #36-12 **Inspection of private sewer lines and storm water drainage connections**
ALD. CROSSLEY & FULLER requesting Home Rule legislation or an ordinance to require inspections of private sewer lines and storm water drainage connections prior to settling a change in property ownership, to assure that private sewer lines are functioning properly and that there are no illegal storm water connections to the city sewer mains.
A) Sewer lines found to be compromised or of inferior construction would have to be repaired or replaced as a condition of sale;
B) Illegal connections would have to be removed, corrected, and re-inspected in accordance with current city ordinances and codes, as a condition of sale.
[01/24/12 @ 8:07 AM]
PROG & SERV VOTED NO ACTION NECESSARY 6-0 on 11/17/14

Referred to Public Safety & Transportation And Public Facilities Committees

- #413-11 **Updates on the renovations to the City's fire stations**
ALD. CICCONE, SALVUCCI, GENTILE & LENNON updating the Public Facilities and Public Safety & Transportation Committees on the progress of renovations to the city's fire stations. [11-17-11 @11:07 AM]
- #367-09 **Discussion on repair of underground streetlight connections**
PUBLIC FACILITIES COMMITTEE requesting discussion with the Law Department on how to resolve the dispute with NStar regarding whose responsibility it is to repair the streetlight connection between the manhole and the base of the streetlight.
[10/21/09 @ 9:00 PM]

Respectfully submitted;

Deborah J. Crossley, Chair

MICHAEL A. GEVELBER

Boston University, Manufacturing Engineering

Education

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA

Ph.D in Mechanical Engineering, August 1988. Specialties: Controls, dynamics, heat transfer, and thermodynamics. Thesis: "Dynamics and Control of the Czochralski Process", G. Stephanopoulos, Dept. of Chemical Engineering, advisor.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA

S.M. degree in Mechanical Engineering, February 1984. Thesis: "Control System Analysis and Dynamic Simulation of an OTEC Power Plant", D.N. Wormley, advisor.

BROWN UNIVERSITY Providence, RI

Sc.B. in Physics, June 1978. Thesis: "Nuclear Magnetic Resonance Study of Motional Narrowing in Glass and Crystalline Cadmium Lithium Nitrate"
Honors in Physics, 1978, Sigma Xi, 1978

Experience

Department of Mechanical Engineering, Boston University Boston, MA
Assistant (1988) and Associate Professor (1996). Research interests in advanced control design for enhanced materials processing including control and system design, modeling, instrumentation, and development of control analysis techniques. Co-chair of the Universities Energy Working Group and member of the Universities Sustainability Committee.

Cyber Materials LLC Newton, MA
Founder (2004) and Manager. Development and commercialization of advanced control and sensor solutions to improve industrial material processing capabilities.

Consultant Cambridge, MA
August 1983 to January 1985. Simulation and control analysis for industrial process.

U.S. Department of Energy Washington, DC
Sept. 1979 to Feb. 1981. Analyst in Office of Plans and Technology Assessment, Fossil Energy.

Energy and Environmental Analysis Inc. Washington, DC
November 1978 to September 1979. Analyst. Equipment modeling and cost estimation.

Professional Activities

- Editorial Board, "Robotics and Computer Integrated Manufacturing, An International journal of manufacturing and product and process development", IFAC, the International Federation of Automatic Control, 2003-2009.
- Founder (2005-2010) and co-director of Burr Elementary School Science and Engineering Discovery Week, a program that brings scientists and engineers into the classroom to give students a feeling of what real scientists and engineers do and why its exciting.
- Thermal Spray Society Program Committee, ASM International, 2003-2010
- International Thermal Spray Conference Program Committee, 2003-2010.
- Session Chair, International Symposium on Flexible Automation, July 2006, Osaka Japan.
- Program Committee for Thermal Spray Society Workshop: Consistency & Reliability of Thermal Spray Coatings: Issues and Practical Solutions: Sensors and Controls, Fall 2004.
- INEEL Summer Faculty Fellowship (1998, 1999)
- Program Committee for 3rd International Workshop on Modeling and Crystal Growth, 2000
- Program Committee for Japan-USA Symposium on Flexible Automation, 1994, 1996
- Journal Reviewer:
 - Automatica
 - Polymer
 - International Journal of Modelling and Simulation
 - IIE Transactions on Design and Manufacturing
 - IEEE Transactions on Control Systems Technology
 - Journal of Crystal Growth
 - Journal of Heat and Fluid Flow
 - Journal of Dynamic Systems, Measurement, and Control
 - Journal of Engineering for Industry.
- * Reviewer, International Federation of Automatic Control (IFAC) conference proceedings
- Proposal reviewer for NSF SBIR program 1997-2002, research proposal reviewer NSF 1998-2003, 2009 for the Division of Design Manufacture and Industrial Innovation, Nanotechnology Program
- Organizer of Emerging Technology and Best Industry Practices Seminar series, Boston University, Manufacturing Engineering Department, 1992-2002.

New Course Development:

- **MN 500/GE 520 Course on Analysis of Energy Conservation/Supply Alternatives: BU Case Study**, offered in conjunction with the Center for Energy and Environmental Studies. Multi-

disciplinary evaluation of technical, economic, and organizational issues of conservation options for the Charles River Campus of Boston University.

- **EK 546: Assessment of Sustainable Energy Technologies:** This course provides students with the background needed to assess the potential for energy efficiency and effectiveness of different technologies, the related economics, identify the key technical risks in emerging technologies, evaluating the life cycle implications of emerging technologies, manufacturing issues, as well as estimating performance.. Examples are drawn from a variety of emerging technologies.

Patents

- 1) "Control System for the Czochralski Process", M.A. Gevelber and G. Stephanopoulos, U.S. Patent no. 4,857,278, 8/89
- 2) "Interface Angle Estimation System", M.A. Gevelber and A.T. Patera, U.S. Patent no. 4,943,160, 7/90.
- 3) "Method for Closed-Loop Control of CVD Process", M.A. Gevelber and M. Toledo-Quinones, U.S. Patent no. 6,162,488, 12/2000.
- 4) "Feedback Enhanced Plasma Spray Tool", M.A. Gevelber, D. Wroblewski, Fincke, W. D. Swank, R.L. Bewley, D.C. Haggard, U.S. Patent 6,967,304, 11/22/2005.
- 4) "Feedback Enhanced Plasma Spray Tool", M.A. Gevelber, D. Wroblewski, U.S. Patent divisional application, molten plasma flux control, application, 9/2007, 20060198944, granted 4/11.
- 5) "Ebeam Vision System for Monitoring and Control", Michael Gevelber, Brian Vattiat, and Adam Brewster, U.S. Patent no. 7,479,632, 1/20/2009.
- 6) Michael Gevelber and Xuri Yan, Provisional Patent Application, 10/09/2007, "Control System for Electrospinning of Nano-Fibers" (60/998,214), BU case 07-79.
- 7) Vattiat, B., Wroblewski, D., Gevelber, M., "Plasma State and Flux Sensor", patent application (serial no. 12/008787), joint Boston University/Cyber Materials application January, 2008.

Referred Publications: Journal, Conference Proceedings, and Book Chapters,

1. J. Winkler, M. Neubert, J. Rudolph, N. Duanmu, and M. Gevelber, Chapter 3, "Czochralski Process Dynamics and Control Design", in "*Crystal Growth Processes Based on Capillarity: Czochralski, Floating zone, shaping and crucible techniques*", edited by Thierry Duffar, April 2010.
2. D. Wroblewski, G. Reimann, M. Tuttle, D. Radgowski, M. Cannamela, S. Basu, M. Gevelber, "Sensor Issues and Requirements for Developing Real-Time Control for Plasma Spray Deposition", *Journal of Thermal Spray Technology*, Vol. 19(4), June 2010, pp. 723—735.

3. X. Yan, M. Gevelber, "Investigation of Electrospun Fiber Diameter Distribution and Process Dynamics", published in the Proceedings of the Electrostatics Joint Conference, Boston University, June 16-18, 2009 and in the *Journal of Electrostatics*, 68 (October 2010), pp. 458-264.
4. E. Speyerer, M. Gevelber, D. Radgowski, "Development of an Adaptive System ID Method for Enabling Advanced E-Beam Sweep Pattern Design", pp 1-8 TuAT6.1, in the 2010 ASME Dynamic Systems and Control Conference Proceedings, ed P. Meckl, Cambridge MA, September 2010.
5. M. Gevelber, D. Wroblewski, M. Cannamela, S. Basu, D. Radgowski, and M. Tuttle, "Sensor and Control Design Issues for Developing Real-Time Deposition Rate Control for Plasma Spray", pp 1-8, TuAT6.6, in the 2010 ASME Dynamic Systems and Control Conference Proceedings, ed P. Meckl, Cambridge MA, September 2010.
6. X. Y and M. Gevelber, "Process Dynamics and Control Analysis for Electrospinning Nanofibers", pp1-8, WeBT4.1, in the 2010 ASME Dynamic Systems and Control Conference Proceedings, ed P. Meckl, Cambridge MA, September 2010.
7. X. Yan, and M. Gevelber, "Electrospinning of Nanofibers: Analysis of Diameter Distribution and Process Dynamics for Control", In the "2010 International symposium on Flexible Automation" Conference Proceedings, ed. N. Sugimura and J. Cao, July 2010, Tokyo Japan
8. M. Gevelber, D. Wroblewski, M. Canemella, S. Basu, "Sensor Design Issues for Implementation of Real-Time Deposition Rate Control for Plasma Spray", In the "2010 International symposium on Flexible Automation" Conference Proceedings, ed. N. Sugimura and J. Cao July 2010, Tokyo Japan
9. M. Gevelber, D. Wroblewski, B. Vattiati, O. Ghosh, M. VanHout, and S.N. Basu, "Issues and Requirements for Developing a Plasma Spray Deposition Rate Sensor for Real-time control", *International Thermal Spray Conference*, Maastricht, The Netherlands, June 2-4, 2008, Conference Proceedings: ed. E. Lugscheider, 2008, pp 912-916.
10. D. Wroblewski, O. Ghosh, A. Lum, M. VanHout, S.N. Basu, M. Gevelber, and D. Willoughby, "Analysis of Plasma Spray Particle State Distribution for Deposition Rate Control", *International Thermal Spray Conference*, Maastricht, The Netherlands, June 2-4, 2008, Conference Proceedings: ed. E. Lugscheider, 2008, pp 838-843
11. Gevelber, D. Wroblewski, M. VanHout, O. Ghosh, D. Willoughby, S. Basu, "Sensor and Control Design Issues for Implementation of Real-Time Deposition Rate Control for Plasma

- Spray", ASME International Mechanical Engineering Congress , Oct 31-Nov. 6, 2008, Boston, IMECE2008-68958, pp 10.
12. D. Wroblewski, O. Ghosh, A. Lum, D. Willoughby, M. VanHout, K. Hogstrom, S. Basu, M. Gevelber "Modeling and Parametric Analysis of Plasma Spray Particle State Distribution for Deposition Rate Control", IMECE2008-68752, *ASME International Mechanical Engineering Congress*, Oct 31-Nov. 6, 2008, Boston.
 13. X. Yan, M. Gevelber, "Analysis of Electrospinning Nanofibers: Diameter Distribution, Process Dynamics, and Control", *ASME International Mechanical Engineering Congress* , Oct 31-Nov. 6, 2008, Boston, IMECE2008-68299, pp8
 14. G. Reimann, D. Radgowski, M. Gevelber, "Methods for Improving Optical Coating Quality for E-beam Deposition: Minimizing Deposition Rate Variations and Manufacturing Case Studies", *51st Annual Technical Conference Proceedings of Society of Vacuum Coaters*, 2008 Apr 19-24 Chicago IL , Apr 19-24, 2008 Chicago IL , pp 427-432.
 15. D. Radgowski, G. Reimann, M. Gevelber, "Critical Measurement and Control Issues in Selecting a Quartz Crystal Monitor," *51st Annual Technical Conference Proceedings of Society of Vacuum Coaters*, Apr 19-24, 2008 Chicago IL pp. pg 27-30, 2008.
 16. S.N. Basu, G. Ye, R. Khare, B. McCandless, M. Gevelber, D. Wroblewski, "Dependence of splat remelt and stress evolution on surface roughness length scales in plasma sprayed thermal barrier coatings," *Int. Journal of Refractory Metals and Hard Materials*, 2009.
 17. G. Reimann, D. Radgowski, M. Gevelber, "Achieving reliable optical thickness without an optical monitor: industrial benchmarks," *50th Annual Technical Conference Proceedings of Society of Vacuum Coaters*, pp. 348-353, 2007.
 18. Gevelber, M., Xu, B., Reimann, G., "Tools for Improving Precision Optical Coatings Through E-Beam Sweep Design", published in the proceedings of the 2007 Optical Interference Coatings (OIC) Conference, June 2007, Tucson-AZ, OSA, paper TuCPDP1.
 19. Michael Gevelber, Xuri Yan, Jian H. Yu, Gregory C. Rutledge, "Electrospinning Process Dynamics and Fiber Diameter Distributions for Development of Real-Time Control", presented at and published in proceedings of Symposium B. Processing of Nanofibers, MRS Fall 2006, MRS Proceedings, Vol. 948E, "Structure, Processing and Properties of Polymer Nanofibers for Emerging Technologies", editors K.Kiick and T. Long, paper 0948-B07-02
 20. Gevelber, M., Cui, C., Vattiat, B., Ghosh, O., Wroblewski, D., Basu, S., "Real Time Control for Plasma Spray: Sensor issues, torch nonlinearities, and control of coating thickness", Paper 0255, Proceedings of the 2006 International Symposium on Flexible Automation, Osaka, pp. 686-691, July 2006

21. Reimann, G., Vattiat, B., Brewster, A., Gevelber, M., "Development of a Robust and Optimized Automatic Tuning System For Control of Evaporation Processes", Paper 0238, Proceedings of the 2006 International Symposium on Flexible Automation, Osaka, pp. 663-670, July 2006.
22. Gevelber, M., B. Xu, D. Smith, "Improved Rate Control for E-beam Evaporation and Evaluation of Optical Performance Improvements", Applied Optics, Vol. 45, Issue 7, March 2006, pp 1456-1460.
23. Reimann, G., Vattiat, B., Brewster, A., Gevelber, M., Hildebrand, J., Hildebrand, C., "Robust Controller Tuning for Evaporative Deposition Processes: Results from Manufacturing Case Studies", Proceedings of the Society of Vacuum Coaters, 49th annual technical conference, Washington DC, 2006, pp. 421-427.
24. Xu, B., Gevelber, M., Smith, D., Reimann, G., Bellum, J., "E-gun Sweep Design to Improve Silica Coating Performance: E-Gun nonlinearity investigation and silica evaporation modeling for sweep design", Proceedings of the Society of Vacuum Coaters, 49th annual technical conference, Washington DC, 2006, pp. 319-325.
25. Basu S.N., Ye G., Gevelber M., and Wroblewski D., "Microcrack formation in Plasma Sprayed Thermal Barrier Coatings", *International Journal of Refractory Metals and Hard Materials*, 23, 335-343(2005).
26. Reimann, G., Gevelber, M., Vattiat, B., Hildebrand, J., Hildebrand, C., "Robust System Identification and Optimized Tuning for Control of Evaporation Processes", Proceedings of the Society of Vacuum Coaters 48th annual technical conference. Denver, CO, 2005, pp 697-702.
27. Xu, B., Gevelber, M., Smith, D., Vattiat, B., "Improving Rate Control in Electron-Beam Evaporated Optical Coatings: maintaining source surface uniformity for large size laser optics coatings and evaluation of system drift", Proceedings of the Society of Vacuum Coaters 48th annual technical conference. Denver, CO, 2005, pp 400-405.
28. Gevelber M., Cui C., Vattiat B., Ghosh O. , Wroblewski D., Basu S., "Real Time Control for Plasma Spray: Sensor Issues, Torch Nonlinearities, and Control of Coating Thickness", International Thermal Spray Conference, Basel, 2005, pp. 667-672.
29. M. Gevelber, B. Xu, D. Smith, "Improving Rate Control in Electron-Beam Evaporated Optical Coatings", in Vacuum Technology and Coating, August 2004, pp 58-65
30. Gevelber, M., B. Xu, D. Smith, "Improved Rate Control for E-beam Evaporation and Evaluation of Optical Performance Improvements", paper ME 9 in the Proceedings of the Ninth Optical Interference Coating Conference of the OSA, Tucson, June 2004.
31. M. Gevelber, B. Xu, D. Smith, J. Oliver and J. Howe, "Improving Rate Control in Electron-Beam Evaporated Optical Coatings: the role of arcing and controller tuning", Proceedings of the Society of Vacuum Coaters 47th annual technical conference. Dallas, TX, April 24 - 29, 2004, pp92-98.

32. M. Gevelber, B. Xu, N. Duanmu, D. Smith, "Development of Improved SiO₂ Rate Control for Electron-Beam Evaporated Optical Coatings", published in the Proceedings of the Japan – USA Symposium on Flexible Automation, Denver, Colorado, July 19-21, 2004, paper UL 75.
33. M. Gevelber, C.Cui, B. Vattiat, D. Wroblewski, "Real-Time Control for Plasma Spray: Production Issues and Engineering Coating Structures", published in the Proceedings of the 2004 Japan-USA Symposium on Flexible Automation; July 19-21 2004; Denver, Colorado, Paper UL 67.
34. S.N. Basu, G. Ye, M. Gevelber and D. Wroblewski, "Microcrack Formation in Plasma Sprayed Thermal Barrier Coatings", to be submitted to the International Journal of Refractory Metals and Hard Materials
35. Gevelber, M., Cui, C., Vattiat, B., Wroblewski, D., Fincke, J.R., and Swank, W.D., "Real-Time Control for Plasma Spray: production issues and distribution implications" , International Thermal Spray Conference, 5-8 May, 2003, in Orlando, FL., pp 1121-1120.
36. Gevelber, M., Xu, B., Smith, D., "Improving Rate Control for E-Beam Deposited Optical Coatings", published in the 46th Proceedings of the Society of Vacuum Coaters, San Francisco CA., May 2003, pp 18-23.
37. Fincke, Swank, Bewley, Haggard, Gevelber, Wroblewski, "Control of Particle Temperature, Velocity, and Trajectory in the Thermal Spray Process", International Thermal Spray Conference, 5-8 May, 2003, in Orlando, FL., pp. 1093-1100.
38. Basu, S.N., Ye, G., Gevelber, C. Cui, D. Wroblewski, M., Fincke, J.R., and Swank, W.D., "Plasma Sprayed Coatings with Engineered Microstructures", International Thermal Spray Conference, 5-8 May, 2003, in Orlando, FL., pp. 1599-1608
39. Wroblewski, D., Khare, R., Gevelber, M., 2002, "Solidification Modeling of Plasma Sprayed TBC: Analysis of Remelt and Multiple Length Scales of Rough Substrates," J. of Thermal Spray Tech, Vol. 11 (2) June 2002, pp 266-275.
40. M. Gevelber, D. Wilson, N. Duanmu, "Modelling Requirements for Development of an Advanced Czochralski Control System", Journal of Crystal Growth, 230 (2001) pp217-223.
41. J.R. Fincke, W.D. Swank, R.L. Bewley, D.C. Haggarda, M. Gevelber, D. Wroblewski, "Diagnostics and Control in the Thermal Spray Process", April 2001, Journal of Surface and Coatings Technology, Sept-Oct 2001, pp. 537-543.
42. M. Gevelber, D. Wroblewski, J. Fincke, W.D. Swank, "System Characterization and Plasma Particle Distribution Analysis for Development of Closed Loop Control for Plasma Spray", HTD Vol. 366-3; Proceedings of the ASME: Heat Transfer Division, November 2000, Vol 3, pp. 419-426.
43. M. Gevelber, "Process Control", in the Encyclopedia of Electrical and Electronic Engineering, John Wiley & Sons, 1999.

44. Gevelber, M.A., Bufano, M., Quinones, M.T., "Dynamic Modelling Analysis of Chemical Vapor Deposition for Control", *Journal of Dynamic Syst., Meas. and Control*, Vol. 120, 1998, pp164-169.
45. Gevelber, M., Quinones, M.T., Bufano, M.L., "Towards Closed-Loop Control of CVD Coating Microstructure, February 1995, *Journal of Materials Science and Engineering A*, Vol. 209, 1996, pp. 377-383.
46. Gevelber, M.A., M.C. Deniz, R. Liu, and E. Sumitra, "Modelling TiN Deposition for Control of CVD", "International Conference on CVD XIII", 189th meeting of the Electrochemical Society, Los Angeles, May 1996, *Proceedings Vol 96-5*, ed. T.M. Bessmann et. al., pp. 157-162.
47. Smith, C.W., Narendra, K.S., and Gevelber, M.A., "Modelling for Control of Induction Plasma Deposition", *Chemical Engineering Science*, Vol. 50, No. 23, 1995, pp3747-3761.
48. Gevelber, M.A., Quinones, M.T., Bufano, M.L., "Dynamic Modelling of CVD for Real-Time Control of Microstructure", in the *Materials Research Society Symposium on CVD of Refractory Metals and Ceramics III*, edited by Lee, W.Y., Gallois, B.M., Pickering, M.A., Vol. 363, 1995, pp. 33-38.
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Conference Presentations

1. M. A. Gevelber, "Process Dynamics and Measurement Considerations for Developing Electrospinning Control: needle and free surface system", presented at "Nanofibers for the 3rd Millennium", NC State, The Nonwovens Institute, August 2010.
2. M.A. Gevelber, M. Cannemela, D. Wroblewski, S. Basu, "Alternative Real-Time Control Strategies and Sensing Requirements for Improving Thermal Spray Performance", presented at paper given at the International Thermal Spray Conference, Las Vegas, May 2009.
3. D. Wroblewski, M. Cannemela, M. Gevelber, O. Ghosh, M. VanHout, A. Lum, K. Hogstrom, S. Basu, "Plasma Spray Process Modeling for Control: Effect of Torch Inputs on Particle State Distributions", paper given at the International Thermal Spray Conference, Las Vegas, May 2009.
4. M. A Gevelber, "Alternative Control Strategies and Requirements for Improving Thermal Spray Performance", presented at the "Symposium on Improving Reliability and Consistency

in Thermal Spray, Dec 2-3 , 2008, Montreal Quebec, organized by the ASM Thermal Spray Society.

5. X. Yan, M. Gevelber, "Investigation of Electrospinning Parameters that Determine Fiber Diameter Distribution" The Fiber Society 2008 Technical Conference, Oct 1-3, 2008, Boucherville Canada, Abdellah Ajji, Chair
6. M. Gevelber and X. Yan, "Analysis of Electrospinning Process Dynamics and Resulting Nanofiber Diameter Distributions" The Fiber Society 2007 Technical Conference, Oct 9-11, 2007, University of California at Davis, CA, , You-Lo Hsieh, Chair
7. Gevelber, M., Ghosh, O., Cui, C., Wang, H., Basu, S., Wroblewski, D., "Alternative Strategies for Plasma Sprayed Coating Thickness Control", paper given at the International Thermal Spray Conference, Seattle, May 2006.
8. Reimann, G., Vattiat, B., Brewster, A., Gevelber, M. A., Hildebrand, J., Hildebrand. C., "Robust System Identification and Optimized Tuning for Control of Evaporation Processes: benchmark study results of manufacturing performance", paper given at AVS, Boston November 2005.
9. Gevelber, M., "Manufacturing Performance Evaluation of Alternative Control Strategies for IGT Thermal Barrier Coatings", Combustion Turbine Coatings Symposium, Houston Texas, October 26, 2005, invited.
10. Michael Gevelber, Brian Vattiat, Chenhuan Cui, Boston University, Manufacturing Engineering, Larry Pollard, William Barker, Progressive Technologies, David Harter, Siemens Westinghouse Power Corporation-Stationary Fuel Cells, Performance Comparison of Various Sensor Systems and Plasma Spray Torches", poster given at the International Thermal Spray Conference, Basel, May 2005.
11. M. Gevelber, C. Cui, B. Vattiat, D. Wroblewski, S. Basu, "Real-Time Control for Plasma Spray: Production requirements, sensor issues, control design problems and solutions", paper given at the Sensors and Controls 2004 Workshop, International Thermal Spray Society, October 2004
12. Gevelber, M., B. Xu, D. Smith, "Improved Rate Control for E-beam Evaporation and Evaluation of Optical Performance Improvements", presented at the Optical Interference Coating Conference of the OSA, Tuscon, June 2004.
13. Basu, S.N., Ye, G., Cui, C., Gevelber, M., Wroblewski, D., Fincke J.R., and Swank, W.D., Engineering Plasma Sprayed Coating Microstructure by Advanced Control, presented at the Fall MRS Meeting, Dec. 2-6, 2002, Boston, MA.

14. Ye, G., Basu, S., Wroblewski, D., Gevelber, M., Fincke, J., Swank, W, "Characterization of the Plasma Spray Process for the Development of Closed Loop Control", presented at the ASM Materials Solutions Conference, Cincinnati, November 1999.
15. Khare, R., Wroblewski, D., Gevelber, M.A., "2-D Thermal Modeling of Splat Cooling on Rough Substrates", presented at ASM Materials Solutions Conference, Cincinnati, November 1999.
16. Y. Chen, Z. Ren, P. Nair, and M. Gevelber, "Model Based Control Analysis of the Czochralski Process", Presented at the 13th International Conference on Crystal Growth, Jerusalem Israel, July 1998.
17. Y. Chen, J. Jiang and M. Gevelber, "Process Modelling Analysis for Enhanced Control of INP Synthesis", Presented at the 13th International Conference on Crystal Growth, Jerusalem Israel, July 1998.

Invited Seminars, presented by M. Gevelber

1. "Process Control for Improving Materials Processing Capabilities and Sustainability Initiatives at Boston University, presented at the ASM Boston Chapter meeting, November 2010.
2. "Process Dynamics and Measurement Considerations for Developing Electrospinning Control: needle and free surface systems", presented at the Elmarco and University of North Carolina Nonwoven Institute conference: "NANOFIBERS FOR THE 3RD MILLENNIUM 2010", August 2010, Raleigh, North Carolina.
3. "Boston University's Plasma Spray Research", presented to China Academy Institute of Machinery (CAM), Zhejiang Branch and Hangzhou Turbine Power Corp, Hangzhou, China, July 2010.
4. "Electrospinning Process Dynamics and Fiber Diameter Distributions for Development of Real-Time Control Donaldson, Minneapolis, MN, March 2007.
5. Real-time Control for Improving Materials Processing Capabilities: examples from e-beam deposition of precision optical coatings and plasma spray of TBC and fuel cells", M.I.T., Laboratory for Manufacturing, October, 2006.
6. "Advanced Control for Improved Electron Beam Deposition for Precision
a. Optical Coatings", Shanghai Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Jiading, Shanghai, July 2006.
7. "Advanced Control for Improved Electron Beam Deposition for Precision", Shincron LTD, Tokyo, July 2006.
8. "Advanced Control for Improving Materials Processing Capabilities: examples from e-beam deposition for optical coatings and plasma spray of TBC and fuel cells", Department of Mechanical Engineering. UCLA May 2006.

9. "Advanced Control for Improving Materials Processing Capabilities: examples from e-beam deposition for optical coatings and plasma spray of TBC and fuel cells", Department of Mechanical Engineering, UCSB May 2006
10. Gevelber, M., "Analysis of Electrospinning Dynamics for Development of Real Time Control", Department of Polymer Chemistry, University of Akron, February 2006
11. Gevelber, M., "Development of Real-Time Control for Plasma Spray: sensing and nonlinear issues, University der Bundeswehr, Munich, Department of Electrical Engineering, November 2005.
12. Gevelber, M., "Development of Real-Time Control for Electron Beam Coatings for Precision Optics", Leybold, Aseneu Germany, November 2005.
13. "Advanced Real-time Control for Enhanced Processing Capabilities for E-beam Deposited Optical Coatings", Laboratory for Laser Energetics, University of Rochester, August 2003.
14. "Advanced Control for Engineering Plasma Sprayed Coating Structure: system characterization and implementation results", Mechanical Engineering Department, University of Toronto, Center for Advanced Coating Technology, August 2003.
15. "Advanced Control for Engineering Plasma Sprayed Coating Structure: system characterization, sensor issues, and implementation results", Institute of Materials Science, University of Connecticut, June, 2003.
16. "Real-Time Control for Improving Materials Processing Capabilities: examples from e-beam deposition of optical coatings and plasma spray of TBC and fuel cells", Mechanical Engineering Department, University of California, Berkeley, May 2003.
17. "Real-Time Control for Plasma Spray: production issues and distribution implications" SUNY Stony Brook, Center for Thermal Spray, Feb. 2003.
18. "Real-Time Control for Plasma Spray: production issues and distribution implications" NIST, Ceramics Division, Washington DC, Dec. 2002.
19. "Real-Time Control for Plasma Spray: performance evaluation and production/implementation issues", SURFTEC annual meeting, Industrial Materials Institute, National Research Council Canada, Montreal, November 2002.
20. "Advanced Control for Engineering Plasma Sprayed Coating Structure: system characterization, sensor issues, and implementation results", September 2001, presented at the University of Connecticut, Department of Mechanical Engineering.
21. "Real-Time Control for Plasma Deposition: system characterization, sensor issues, and implementation results", Tufts University, Thermal Manufacturing Workshop, School of Engineering, M. Gevelber, June 2001,

22. "Dynamic Modeling Analysis for Control of CVD" , University of California, Santa Barbara, Mechanical Engineering Seminar, May 1998
23. "Process Control for Enhanced Processing of Engineered Materials", June 16-20, 1997 at M.I.T., part of the New Developments in Manufacturing Process Technology Seminar at the Laboratory for Manufacturing and Productivity.
24. "Advanced Control for Enhanced Processing of Engineered Materials", IEEE Control and Systems Society, Boston, January 15, 1997,
25. "Real-Time Control of CVD", February 1998, Kennametal.
26. "Real-Time Control of CVD", October 1997, Northeastern University.
27. "Dynamic Modelling of CVD for Real-time Control of Microstructure", NASA Lewis, Systems Dynamics Branch, June 16, 1995.
28. "Dynamic Modelling of CVD for Real-time Control of Microstructure", RPI Mechanical Engineering Seminar, March 23, 1995.
29. "Dynamic Modelling of CVD for Real-time Control of Microstructure", University of Minnesota, Mechanical Engineer Seminar Program, March 8, 1995.
30. "Modelling of Induction Plasma Deposition for Control Design", University of Minnesota, Guest Lecturer, Plasma Processing Graduate Seminar, March 8, 1995.
31. "Dynamic Modeling of CVD for Real-Time Control of Coating Microstructure", Brown University, Joint Materials Science/Solid Mechanics Seminar, Sept. 28, 1994.
32. "Control of Materials Processing", Kao Corp, Recording and Imaging Science Lab, Tochigi Japan, July 18, 1994.
33. "Dynamic Modelling of CVD for Real-Time Control of Microstructure", Berkeley, Mechanical Engineering Department, April 1994,
34. "Dynamic Modelling of CVD for Real-Time Control of Microstructure", Stanford University, Electrical Engineering Department, April 1994.
35. "Dynamic Modelling of CVD for Real-Time Control of Microstructure"., University of Michigan, March 1994.
36. "Modelling for Control of Induction Plasma Deposition", Universite de Limoges, Laboratoire de Materiaux Ceramiques et Traitements de Surface, P. Fauchais, November 1993.
37. "Control of Materials Processing", MIT, Sematech Center of Excellence meeting, March 5, 1993.
38. "Modelling and Control of Induction Plasma Deposition", University of Wisconsin, Plasma-Aided Manufacturing Research Center, March 6, 1992.

39. "Modelling and Control of Induction Plasma Deposition", GE Engineering Materials Technology Laboratories, Lynn MA, October 9, 1991.
40. "Dynamics and Control of Czochralski Crystal Growth", University of Rochester, December 13, 1988.
41. "Dynamics and Control of Czochralski Crystal Growth", Harshaw/Fitrol Comp., , December, 1988.
42. "Materials Processing: Design and Control", Boston University Minuteman Seminar: Frontiers in Manufacturing,
43. October 1988.
44. "Control Design Consideration for the Czochralski Process", General Electric Corporate Research & Development, Control Division Schenectady. September 1987.
45. "Dynamics and Control Design for the Czochralski Process", New England Section of the American Association for Crystal Growth, Boston. May 1987.

Research Grants

1. "Analysis for Development of Electrospinning Control Concepts", to U.S. Army Natick Soldier RD&E Center, 5/1/11-4/30/12, \$85,430.
2. "Real-Time Control for Engineering Electrospun Nanofiber Diameter Distributions for Advanced Applications", Gevelber, PI, NSF, 9/2008-8/2011, \$224,100
3. "STTR Phase II: Development of Advanced E-Beam Sweep Patterns and Control Systems", Cyber Materials LLC / NSF, \$151,217.00, 4/1/06 - 3/31/08, co PI
4. "GOALI: Engineering Coating Microstructure Through Advanced Plasma Spray Processing: Fuel Cell and Thermal Barrier Applications ", National Science Foundation, \$398,954.00, 5/1/03 - 4/30/07, PI
5. "GOALI: Engineering Coating Microstructure Through Advanced Plasma Spray Processing: Fuel Cell and Thermal Barrier Applications (REU Supplement)",
6. National Science Foundation, \$12,000.00, 5/1/05 - 4/30/07, PI
7. STTR Phase 1 Proposal: Advanced Control of Electron-Beam Deposition for High Precision Optical Coatings, NSF SBIR, BU subcontract: \$58,240, 1 year, PI: Douglas Smith, Vacuum Process Technology, Michael Gevelber, co-PI
8. Proposal to Develop Advanced Control Capabilities for E-beam Deposition, Sandia, via VPT \$34,656 for 8 months, Gevelber (PI), 8 months,

9. "Control Development and Modelling for Enhanced Crystal Growth: Application to Novel New Technologies and Extension of Conventional Capabilities", PI, National Science Foundation, \$270,000.00, 9/1/01 - 8/31/05
10. "Control Development and Modelling for Enhanced Crystal Growth: Application to Novel New Technologies and Extension of Conventional Capabilities (REU)", PI, National Science Foundation, \$30,000.00, 9/15/01 - 8/31/05
11. Development of Advanced Instrumentation for Student Research and Education on Plasma Coating Crack Formation Fundamentals, equipment grant, \$88,900, NSF/DMR, Gevelber (PI), Wroblewski, and Basu.
12. Supplemental Research Experience for Undergraduates, NSF, Gevelber (PI) \$12,000.
13. Integrated Plasma Deposition Processing for Advanced Control of Coating Structure", \$334,000 for 3 years, NSF, Gevelber (PI), Wroblewski, and Basu.
14. DURIP Equipment Proposal: Real Time Control for Advanced Materials Processing", \$120,000 from AFOSR, Gevelber (PI), Wroblewski, Basu
15. Intelligent Process Control for Czochralski Crystal Growth, ARPA/AFOSR through SUNY Stony Brook, Gevelber, co-PI, 2 year for \$149,594.
16. Research Gift from Intelcore, related to work in analysis of control performance for Fiber Preform Manufacture and Fiber Draw: \$34,000. Summer 2001.
17. "Supplemental Research Experience for Undergraduates," NSF, from 1998-2003, \$32,000
18. Intelligent Process Control for Czochralski Crystal Growth, ARPA/AFOSR through SUNY Stony Brook, Gevelber, co-PI, 3 year for \$224,391.
19. Integrated Plasma and Chemical Vapor Deposition Processing for Advanced Control of Coating Structure", \$12,000, 1 year grant from United Technologies University Program, Gevelber, Wroblewski and Basu.
20. Real-Time Control of Engineered Coating Microstructure, Gevelber (PI) and Sarin, NSF, \$179,706, 3 years.
21. Modelling and Control of Plasma Deposition for Enhanced Materials Production, Gevelber, NSF, \$204,155, 3 years
22. Insitu Intelligent Materials Processing Equipment Grant, Gevelber and Sarin, NSF, \$47,066.

23. System and Control Analysis of Low Pressure Plasma Deposition", Gevelber, NSF, \$70,000 (Research Initiation Award).

Related Research Grants through Cyber Materials with significant Boston University Involvement

1. Air Force SBIR, Phase 1, "Control of Plasma Sprayed Coating Structure", \$100,000 [with S, Basu]
2. NSF SBIR, Phase II grant, "Plasma Spray Sensor Development", \$500,000 [with Donald Wroblewski].
3. NSF SBIR, Phase I grant, "Plasma Spray Sensor Development", \$100,000 [with Donald Wroblewski]

Ph.D Thesis Supervision (advisor and first reader).

1. Xuri Yan, "Electrospinning of Nanofibers: analysis of diameter distribution and process dynamics for control", Ph.D. in Mechanical Engineering, Oct. 2010.
2. Chenhuan Cui, " Experimental and modeling analysis of plasma spray nonlinearities for advanced process control design", Ph.D. in Manufacturing Engineering, 2007.
3. Bing Xu, "Experimental and modeling analysis for developing improved electron beam processing capabilities for precision optical coatings", Ph.D. in Manufacturing Engineering, 2007.
4. Ning Duanmu, "Modeling, dynamics, and control of the Czochralski crystal growth process", Ph.D. in Manufacturing Engineering, 2006.
5. Manuel Toledo-Quinones, "Dynamic Modelling of Chemical Vapor Deposition for Real-Time Control", May 1995, Ph.D. in Electrical Engineering,

M.S Thesis advisor and first reader:

1. Onomitra Ghosh, "Modeling and sensing strategies of plasma spray particle distributions for deposition rate control", 2007, M.S. in Manufacturing Engineering.
2. Brian Vattiat, "Analysis of the Sensor and Measurement Requirements for Feedback Control of Plasma Spray Processes", January 2004, MS, Mechanical Engineering,
3. D. Wilson, "Modelling of Czochralski Crystal Growth for Advanced Control Design", May 2002, M.S. in Electrical Engineering,

4. R. Liu, "Modelling and Dynamic Analysis of TiN Deposition for Control of CVD", May 1998, M.S. in Manufacturing Engineering,
5. M. Sikka, "Modeling for Control of Plasma Deposition: Plasma-Particle Interactions and Solidification Process", May 1997, M.S. in Manufacturing Engineering,
6. E. Sumitra, "Modeling and Analysis of CVD for Closed Loop Control: Deposition Physics, Dynamic Characterization and Experimental Verification", May 1997, M.S. in Manufacturing Engineering,
7. C. Smith, "Low Order Modelling and Control Analysis of Induction Plasma Deposition", May 1995, MS in Manufacturing Engineering, First Reader. Publications: [12, 17
8. M. Bufano, "Dynamic Modelling of Heat and Mass Transport for Control Of Chemical Vapor Deposition", January 1995, MS in Mechanical Engineering,
9. M. Sharma, "Control Structure Analysis and Design for Poorly Conditioned Multivariable Systems", May 1993, MS in Manufacturing Engineering,
10. K.S. Narendra, "Modelling and Control of Induction Plasma Deposition", January 1992, MS in Manufacturing Engineering.

Jim Purdy, AICP

Director, Planning Group

Introduction

Jim is a land use and environmental planner with over 30 years of experience. He has managed transportation, open space, and pedestrian/bicycle plans and environmental documentation, worked through public participation to resolve controversies, and prepared numerous master plans and open space plans.

Before coming to the Collaborative in 2007, Jim was a Principal Planner at the Louis Berger Group and a Managing Principal at Wallace Floyd Design Group.

Project Experience

Massachusetts DOT – I-93/I-95 Interchange Environmental Permitting and Preliminary Design

Jim is the Collaborative's Project Manager for the team effort to advance improvements for this critical system interchange north of Boston. Building upon his successful role as Project Manager for the previous 93/95 Interchange Study, which achieved consensus on a design concept for this highly contentious reconfiguration of a major system interchange, Jim will oversee public outreach and communications during the environmental permitting phase of the project.

Acton, MA and Adjacent Towns – Community Challenge Grant for Shared Transportation

As part of team, Jim is providing support to the Towns of Acton, Boxborough, Littleton, Maynard, Stow and Clock Tower Office Park in Maynard, MA in analyzing, recommending and implementing a transportation network. The goal of the project is to transform the current disparate, uncoordinated and incomplete transportation services in the region into a new cooperative and coordinated transportation system.

Town of Acton, MA – Comprehensive Community Plan

As Project Manager for the Acton 2020 Plan, Jim led the effort to address the needs of all aspects of the community, from housing to transportation, town services and facilities, and fiscal well being. During Phase I of the work, Jim participated in an extensive Public Outreach and Visioning process, meeting with the Town's Outreach Steering Committee and assisting in the planning and conduct of well-attended public visioning workshops. For Phase II, Jim oversaw the preparation of the plan report and worked extensively with the town on its overwhelming adoption at the April 2012 town meeting.

Massachusetts DOT – Statewide Bicycle Transportation Plan

Jim provided technical support on this important project including the development of the GIS-based comprehensive inventory of on- and off-road bicycle facilities already in place, in development, or planned. Jim also assisted with stakeholder outreach and report writing and editing.

Massachusetts DOT – State Freight and Rail Plan

Working with a team, Jim helped to prepare a land use policy analysis that addresses the preservation of sites suitable for freight-intensive use. This included the evaluation of several Massachusetts regulatory mechanisms available to address site preservation and development.

Massachusetts DOT – youMove Massachusetts Strategic Outreach

Jim supported the outreach workshops for this important civic engagement project. He facilitated group discussions at five of the YMM public workshops and prepared the Interim Report on civic engagement for the plan. As an additional task for the project, Jim helped to assemble projects to be included in the Governor's economic stimulus package.

Massachusetts DOT - Route 28x Enhancements Project

Jim Participated in the public involvement process for the Route 28X Enhancements project for the Massachusetts Department of Transportation (MassDOT). This project represented a fast-track effort to program funds from the American Reinvestment and Recovery Act (ARRA) to improve transit services in on one Boston's highest ridership bus routes. The project's effort included newsletters, development of collateral materials in three languages, door-to-door outreach, distribution of meeting flyers on buses, and media relations.

Massachusetts DOT – Transportation Enhancements (TE) Program Redesign

Jim served as Project Manager and oversaw the work of the subconsultants to identify best practices in TE programs throughout the United States. Jim also oversaw the analysis of prior and ongoing applications for TE funds that led to recommendations for system improvements.

Federal Transit Administration – ADA Compliance Reviews for New, Key, and Renovated Rail Stations

Jim is the Collaborative's Project Manager for the ongoing ADA Rail Stations contract and has performed ADA rail station compliance reviews for FTA's Office of Civil Rights since 2007. This has included assessments of rail stations at 12 transit systems throughout the United States.

Federal Transit Administration – ADA Compliance Reviews for ADA Complementary Paratransit, Stop Announcements and Route Identification, and Bus Accessibility Equipment

Since 2007, Jim has participated in or led more than 17 ADA compliance reviews for FTA's Office of Civil Rights. On several of these reviews, he has served as FTA's representative during on-site visits to transit systems.

Other Project Experience

- Vermont Agency of Transportation - Accelerated Environment Impact Statement for the Circ-Williston Connector
- Town of Bedford, NH and the Nashua Regional Planning Commission – New Hampshire Route 101 Corridor Study
- New Hampshire Department of Transportation – New Hampshire Route 16 Public Involvement Plan
- New York Metropolitan Transit Authority – Fulton Street Transit Center

- Massachusetts Highway Department – Massachusetts Pedestrian Plan
- Boston Redevelopment Authority – Dorchester Avenue Streetscape and Transportation Action Plan
- Boston Transportation Department – East Boston Transportation Action Plan
- Town of Peterborough, NH – West Peterborough Improvement Plan
- Town of Middletown, RI – Development Impact Fee Study
- Town of Winchester, MA – Strategic Plan Update
- Private Client – Environmental Documentation for Transit-Oriented Development
- Various cities in Massachusetts – Open Space and Recovery Action Plans
- Town of Reading, MA – Planned Unit Development Bylaw
- Boston Redevelopment Authority – South Bay Development Study
- Massachusetts Highway Department and Massachusetts Turnpike Authority – Supplemental Environmental Impact Statement/Environmental Impact Report volume on the I-93 Central Artery/Tunnel Charles River Crossing
- Massachusetts Highway Department – Bridge Design Review Committee Report
- Massachusetts Institute of Technology – Northeast Sector Campus Plan
- Massachusetts Highway Department – Environmental Permitting Highway Projects, including Route 1/Walnut Street bridge reconstruction in Saugus and the Route 2 Crosby's Corner reconstruction
- The New England Transportation Initiative
- Federal Aviation Administration – Part 150 Airport Noise Compatibility Planning Study of Pease International Tradeport
- Logan International Airport – Logan Ground Access Study Environmental Impact Report
- Massachusetts Department of Public Works and the Massachusetts Highway Department – Central Artery/Third Harbor Tunnel EIS/R
- Massachusetts Port Authority Development Department – Commonwealth Flats Development
- City of Cambridge, MA – Fresh Pond Parkway Reconstruction
- Massachusetts Department of Environmental Management – Boston Harbor Islands Master Plan

Professional Activities

- Certified, American Institute of Certified Planners
- Member, American Planning Association
- Member, Massachusetts Association of Planning Consultants

Education

- Master of City Planning, Massachusetts Institute of Technology, 1978
- Bachelor of Science in Physics, University of Michigan, 1969