ULSTER COUNTY LEGISLATURE

TRACEY A. BARTELS, Chairwoman
DAVID B. DONALDSON, Vice Chairman
JONATHAN R. HEPPNER, Majority Leader
KENNETH J. RONK, JR., Minority Leader
VICTORIA A. FABELLA, Clerk

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MINUTES

JULY 16, 2019

REGULAR MEETING

7:00 PM

MEETING CALLED TO ORDER BY CHAIRWOMAN: 7:06 PM

JULY SESSION IS DEDICATED IN LOVING MEMORY OF LEGISLATOR JAMES F. MALONEY

Chairwoman Bartels informed the members and those present that the evening's Legislative Session would be dedicated in memory and honor of Legislator James F. Maloney who passed away on July 11, 2019. She asked that everyone remain standing after the Pledge of Allegiance and observe a moment of silence in his memory.

PLEDGE OF ALLEGIANCE TO THE FLAG AND MOMENT OF SILENT MEDITATION:

Led by Eric Borchert, Matthew Jennison, and Giovanni Tamburri, members of BSA Troop #72 Marlboro, in recognition of earning the prestigious rank of Eagle Scout.

In recognition of achieving Boys Scouts of America's highest honor, Chairwoman Tracey Bartels called upon District No. 11 Legislator Richard Gerentine and District No. 10 Legislator Mary Beth Maio, to present a Pride of Ulster County Award to Eric Borchert, Matthew Jennison, and Giovanni Tamburri.

Eric's Eagle Scout project consisted of spackling, repairing drywall and painting the Christ Episcopal Church parish hall, located on Old Post Road in Marlboro. Eric held a pancake breakfast along with his troop, and raised over $1,000.00 for the project.

Matthew's Eagle Scout project included the construction of five park benches and refurbishing another at the Cluett Shantz Memorial Park in Milton for the Town of Marlborough Parks and Recreation Department, adding additional seating for spectators at various areas of the park, including the bocce, basketball and horseshoe courts.

Giovanni's Eagle Scout project consisted of refurbishing and stabilizing two "Meet Me In Marlboro" signs. Giovianni rebuilt and repaired a rock wall, poured concrete to stabilize the sign posts, and planted flowers and laid mulch to complement his community beautification project.

ANNOUNCEMENTS

FIRE EVACUATION PLAN

PLEASE NOTE THAT IN THE EVENT OF AN EMERGENCY THE FIRE DEPARTMENT HAS REQUESTED THAT LEGISLATORS AND ALL OTHERS MOVE AT LEAST ONE BLOCK AWAY FROM THE COUNTY OFFICE BUILDING IN ORDER NOT TO IMPEDE THE FIREFIGHTERS IN THEIR DUTIES

CELL PHONES

Please silence cell phones for the duration of Session.

MICROPHONES

Please be reminded to use your microphones when speaking so that you are recorded for the official record.

ROLL CALL: Present: 21 Absent: 1 (Legislator Collins)

BIRTHDAYS:

Chairwoman of the Legislature Tracey Bartels, July 7th

MOTION TO DISPENSE WITH THE READING OF THE MINUTES OF THE PREVIOUS MEETING

Majority Leader Heppner motioned, seconded by Minority Leader Ronk to dispense with the reading of the minutes of the previous meeting. All in favor.

COMMUNICATIONS FROM:

UC Legislator Kathy Nolan	Lack of Professionalism, UCIDA
NYS Dept. of Taxation & Finance	List of Certified 2019 State Equalization Rates 6/12/2019 & 6/21/2019
Seasoned Delicious Foods	Caribbean Carnival Event 8/11/19
UC Regional Chamber of Commerce	Value of Chamber Membership
	Ribbon Cutting, Front Street Tavern 7/18/19
	Postponed Ribbon Cutting, Strand House
	Chamber News July 2019
UC Planning Department	Draft Mtg. Minutes AFPB Mtg. 5/23/19
UC Tourism Department	Trending, July 2019
UC Personnel Department	Civil Service Examination Announcement
UC Comptroller, Adele Reiter	Order of Succession UC Comptroller, Evan R. Gallo, Deputy Comptroller
UC Attorney, Clinton Johnson	County Litigation, June 2019
	Order of Succession
Gagnon & Associates CPA's, Kingston	UC Community Action, Inc. Financial Statements w/Independent Auditor's Report 11/30/2018 and 2017
Charlena Aumiller, Esq., CPA, ICSolutions	FOIL Request
Woodstock Land Conservancy, Maxanne Resnick	Support Ashokan Rail Trail -Trail Heads
Mental Health Assoc. in Ulster County	Brochure 2018 Annual Report
UC Finance Department	UCCC Survey
Mel Sadownick	Save Onteora Lake & Bluestone Forest
Brad Will	Withdrew Name for Consideration to The UC Planning Board
Omar JaJa Herbert	Employment & Educational Opportunity
Patricia Karr Seabrook	850 Rt. 28 LLC Site Plan/Special Permit
The John Werner Family	Thank You Note
The Dominick Felicello Jr. Family	Thank You Note
The Aaron Haines Family	Thank You Note
Katherine Burger, Kingston	Email, Proposed Manufacturing Plant
Central Hudson Gas & Electric	June 2019 Publication Mailer
Eileen Baul, Renter	Fax, In Support of Rent Control
Jeremy Russell, Things Relevant.com	FOIL Request/Response
County News	Vol. 51, No. 13
NYSAC	On Demand Training Catalog 2019
Sawkill Fire District, Richard Alberstadt	Resolution, Withdrawal UC Self-Insurance
	Plan, Effective January 1, 2020

COMMUNICATIONS (continued):

Legal Services of the Hudson Valley, Loretta Spence	3rd Annual Ulster Partners In Justice 11/13
Jared Mance, Chair UC Fire Chiefs Assoc.	Invitation 7/18 Ulster Hose Station #1
Peter Baker	Email, Solar Electric Train in Australia
James L. Seward, NYS Senator, 51st District	Receipt of Res. No. 265 Support EMS Tax Exemption
UC Fire Advisory Board	Minutes, June 26, 2019
CN County News	Vol. 51, NO. 14
Periodic Compensation Review Committee	Minutes, June 18, 2019

COUNTY EXECUTIVE COMMUNICATIONS:

Executive Order No. 1-2019, County Renewable Energy 2019-2020
Executive Order No. 2-2019, Rights of Undocumented Immigrants
Appointment, Ulster County Attorney, Clinton G. Johnson, Effective 7/8/2019
Sworn Oath of Office 7/11/2019
Press Release, Renewable Energy 2030
Press Release, UCAT Expansion
Press Release, Public Safety Training Center
Press Release, New Innovation Team
Press Release, Step Up DWI Enforcement
Press Release, Bring Your Own Bag Act
Executive "Skip the Straw" Bill signing
UC Corporate Compliance Committee Minutes 4/24/19
UC Employee Recognition Day 7/5/19
Media Advisory, Resolution Signing 6/28/19
Media Advisory, Funding Opioid Crisis 7/10
Budgetary Transfers, June 2019
Statement, Legislator James F. Maloney Passing

COMMITTEE REPORTS:	**DATE:**
Economic Development, Tourism, Housing, Planning & Transit	June 4, 2019
Energy & Environment	June 6, 2019
Law Enforcement and Public Safety	June 3, 2019
Laws and Rules, Governmental Services	June 17, 2019
Legislative Programs, Education & Community Services	June 10, 2019
Public Health and Social Services	June 3, 2019
Public Works and Capital Projects	June 5, 2019
Ways and Means	June 11, 2019 June 18, 2019
Ways and Means & Legislative Programs Joint Mtg.	June 11, 2019

PRESENTATION:

Chairwoman Tracey Bartels called upon Legislator James Delaune, Chairman of the Legislative Programs, Education and Community Services Committee to present a Pride of Ulster County award to Francois Barcomb of New Paltz, in recognition of winning the 2019 Jeopardy Teachers Tournament.

PUBLIC COMMENT:

There were (17) speakers signed up for public comment.

1. Joan Burroughs, Town of Esopus: Ms. Burroughs spoke in support of Resolution No. 312.
2. Paul Fowler, Saugerties: Mr. Fowler would like to have seen Legislator's at the County Executive
   Opioid press conference.
3. Victor Capelli, Lincoln Park, Kingston: Mr. Capelli a naturalist and educator spoke about environmental impacts the proposed 850 Route 28 concrete & steel manufacturing project would have on the community & environment.
4. Zura Capelli, Kingston: Ms. Capelli spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
5. Bonne Smith, Kingston: Ms. Smith spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project being in close proximity to Onteora Lake and Bluestone Forest.
6. Andrew Pezzullo, Kingston: Mr. Pezzullo who works for an organization called Food and Water Watch, spoke in opposition to allowing Danskammer and similar fossil fuel projects to be built.

PUBLIC COMMENT (continued):

7. Mel Sadownick, West Hurley: Mr. Sadownick spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
8. Ingrid Schirrholz, West Hurley: Ms. Schirrholz spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
9. Kevin Smith, Woodstock: Mr. Smith spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
10. Kate Reese Hurd, High Falls: Ms. Hurd spoke in opposition to 5G wireless radiation that may produce health effects.
11. Amanda Sisenstin, New Paltz: Ms. Sisenstin shared continued concern of UCAT services.
12. Holly Williams: Ms. Williams spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
13. Sara Eckel, Kingston: Ms. Eckel spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
14. Noelle Damon, Tillson: Ms. Eckel spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
15. David Rose, Kingston: Mr. Rose spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
16. Elizabeth Perez, Kerhonkson: Ms. Perez spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.
17. Joanne Steel: Ms. Steel Chair of the Sierra Club spoke in opposition to the proposed 850 Rt. 28 concrete & steel manufacturing project.

Please Note: Complete content of the public comment period can be heard on the Ulster County Legislative Website.

**RESOLUTION NOS: 178, 268, 269, 271, 273 – 313; 179, 267, 272 – POSTPONED;
212 of 2018, 361 of 2018, 473 of 2018, 120 – NO ACTION TAKEN;
146 – DEFEATED; 270 – WITHDRAWN**

Resolution No. 212 of 2018 – Setting A Public Hearing On Proposed Local Law No. 16 Of 2018, A Local Law Regarding Campaign Finance Reform in Ulster County, To Be Held On Tuesday, December 11, 2018 At 6:00 PM
NO ACTION TAKEN IN COMMITTEE

Resolution No. 361 of 2018 – Setting A Public Hearing On Proposed Local Law No. 21 Of 2018, A Local Law Regarding Campaign Finance Reform in Ulster County, To Be Held On Tuesday, December 11, 2018 At 6:00 PM
NO ACTION TAKEN IN COMMITTEE

Resolution No. 473 of 2018 – Setting A Public Hearing On Proposed Local Law No. 23 Of 2018, A Local Law Entitled "Ulster County Ethics Law", To Be Held On Tuesday, December 11, 2018 At 6:15 PM
NO ACTION TAKEN IN COMMITTEE

Resolution No. 120 - Amending The Rules Of Order To Modify Resolution Deadline
NO ACTION TAKEN IN COMMITTEE

Resolution No. 146 - Establishing A Policy For The Appointment of Members To The Ulster County Industrial Development Agency (IDA)
DEFEATED IN COMMITTEE

Resolution No. 179 - Restricting Chamber Of Commerce Memberships Paid For With Ulster County Funds
POSTPONED IN COMMITTEE

Resolution No. 267 - Amending The Rules Of Order To Prohibit Personal Attacks
POSTPONED IN COMMITTEE

Resolution No. 270 - Requesting The New York State Legislature Introduce Legislation Amending General Municipal Law And The Tax Law, In Relation To Including The County Of Ulster Within The Definition Of A "Designated Community" Under The Hudson Valley Community Preservation Act Of 2007
WITHDRAWN BY SPONSORS

Resolution No. 272 - Setting A Public Hearing On Proposed Local Law No. 5 Of 2019, A Local Law Amending The Code Of The County Of Ulster To Include Mandatory Food Scraps Composting By Large Generators, To Be Held On Tuesday, August 13, 2019 At 6:25 PM
POSTPONED IN COMMITTEE

A motion was made by Majority Leader Heppner, seconded by Minority Leader Ronk, to move Resolution Nos. 268, 271, 302, and 305 out of the Non-Consent Agenda and into the Consent Agenda. All in favor.

Consent

268 Setting A Public Hearing On Proposed Local Law No. 3 Of 2019, A Local Law Amending Chapter 304, Article I Of The Code Of The County Of Ulster, To Be Held On Tuesday, August 13, 2019 At 6:10 PM

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

271 Setting A Public Hearing On Proposed Local Law No. 4 Of 2019, A Local Law Amending Local Law No. 2 of 2019, A Local Law Requiring Restaurants And Fast Food Service Establishments Provide Plastic Beverage Straws Solely Upon Request, To Include Plastic Stirrers, Plastic Cutlery And Condiment Packets, To Be Held On Tuesday, August 13, 2019 At 6:20 PM

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

273 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Family And Educational Consultants, LLC D/B/A Partnership For Education – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

274 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Therese Lane – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

275 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Frank M. Volz, Jr., PHD D/B/A Dr. Frank M. Volz, Jr. And Associates – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

276 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Michelle Eckert – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

277 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Joanna Nadoolman – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

278 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Mary M. Wilsey – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

279 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Renata Basile Crimi – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

280 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – NYSARC, INC. – Columbia County Chapter – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

281 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Elizabeth Harnett – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

282 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Claudia Calaceto – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

283 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Caryn Cornielle – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

284 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Harriet Miller – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

285 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Allyson Shannon – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

286 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Unlimited Care, Inc. – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

287 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – J&D Ultracare Corp. – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

288 Approving The Execution Of A Contract Amendment In Excess Of $50,000.00 Entered Into By The County – Northeast Parent And Child Society, Inc. – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

289 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Family Of Woodstock Inc. – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

290 Approving The Execution Of A Contract Amendment In Excess Of $50,000.00 Entered Into By The County – Tyler Technologies, Inc. – Department Of Information Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

291 Approving The Execution Of A Contract Amendment Causing The Aggregate Amendment Amount To Be In Excess Of $50,000.00 Entered Into By The County – Visual Computer Solutions Inc. – Ulster County Sheriff

ADOPTED BY THE FOLLOWING VOTE:

AYES: 20 NOES: 0
(1 Abstention: Legislator Woltman)
(Absent: Legislator Collins)

292 Approving The Execution Of A Contract Amendment Causing The Aggregate Amendment Amount To Be In Excess Of $50,000.00 Entered Into By The County – Pitingaro & Doetsch Consulting Engineers, P.C. – Veteran Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

293 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Complete Building Solutions, Inc. – Department Of Public Works

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

294 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – 3M Company – Department Of Public Works

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

296 Authorizing The Chair Of The Ulster County Legislature To Execute An Intermunicipal Agreement For A Preschool Special Education And Related Services Program With The Onteora Central School District – Department Of Social Services

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

297 Authorizing A Grant Application To The Federal Transit Administration To Apply, Accept And Administer 5307 Funds Transferred From The Rural Transportation Assistance Program-Section 5311(b)(3) For Bus Replacements And Authorizing The Ulster County Executive To Execute Any Required Applications Or Agreements To Accept Funding – Ulster County Area Transit (UCAT)

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

298 Adopting The Inclusion Of Additional Lands In Agricultural Districts Within Ulster County As Recommended By The Ulster County Agricultural And Farmland Protection Board – Department Of Planning

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

299 Authorizing The Chair Of The Ulster County Legislature To Execute A Grant Application With Required Assurances For The NY Connects Program With The New York State Office For The Aging (NYSOFA) – Office For The Aging

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

300 Authorizing The Chair Of The Ulster County Legislature To Execute A Grant Application With Required Assurances For The Unmet Need Grant From The New York State Office For The Aging (NYSOFA) – Office For The Aging

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

302 Approving The Work Order With The Dormitory Authority Of The State Of New York (DASNY) For Design and Construction Phase Services For Phase 2 Of Campus Roof Project For Hardenburgh Hall Related To The Campus Roofs Capital Project No. 489 – Campus Roofs And Amending the 2019 Ulster County Capital Fund – SUNY Ulster

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

304 Authorizing The Chair Of The Ulster County Legislature To Enter Into A Lease Agreement With Ulster County Community College For The Public Safety Training Facility Located At 250 Ulster Landing Road In The Town Of Ulster – Department Of Public Works (Buildings And Grounds)

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

305 Authorizing The Chair Of The Ulster County Legislature To Execute A Lease With Ulster Savings Bank For Space To Be Used By The Board Of Elections – Department Of Public Works (Buildings And Grounds)

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

306 Authorizing Additional Funding For Capital Project No. 528 – Veteran's Cemetery To Meet The Environmental And Permitting Requirements, And Seeking Lead Agency Status Under the New York State Environmental Quality Review Act (SEQRA) – Veteran Services Agency

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

308 Authorizing The Chair Of The Ulster County Legislature To Execute An Intermunicipal Agreement For The Sharing Of Information Relating To Short-Term Rental Properties With The Town Of Gardiner – Department Of Finance

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

309 Authorizing The Chair Of The Ulster County Legislature To Execute An Intermunicipal Agreement For The Sharing Of Information Relating To Short-Term Rental Properties With The Town Of Marbletown – Department Of Finance

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

310 Authorizing The Conveyance Of County-Owned Property To The Original Owner – Department Of Finance

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

311 Authorizing The Commissioner Of Finance To Accept Bids For Parcels Of County-Owned Real Property For Private Sale And Authorizing The Chair Of The Ulster County Legislature To Convey Such Parcels – Department Of Finance

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

312 In Support Of The John Burroughs Black Creek Trail Project Consolidated Funding Application

ADOPTED BY THE FOLLOWING VOTE:

AYES: 20 NOES: 0
(1 Abstention: Legislator Litts)
(Absent: Legislator Collins)

313 Establishing A Policy Ensuring Maximization Of Funds Received By Ulster County Pursuant To The New York State Homes and Community Renewal Community Development Block Grant Program

ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

Non-Consent

178 Increasing The Employee Contribution Towards The Cost Of Health Insurance Benefits For New Hire Management Non Union Employees

DEFEATED BY THE FOLLOWING VOTE:

AYES: 8 NOES: 13
(Ayes: Archer, Bartels, Delaune, Eckert, Heppner, Maloney, Petit, and Rodriguez)
(Absent: Legislator Collins)

268 Setting A Public Hearing On Proposed Local Law No. 3 Of 2019, A Local Law Amending Chapter 304, Article I Of The Code Of The County Of Ulster, To Be Held On Tuesday, August 13, 2019 At 6:10 PM

MOVED TO CONSENT

269 Adopting Proposed Local Law No. 15 Of 2018 As Amended, (A Local Law Amending Local Law No. 2 Of 2006 (A Local Law Adopting A County Charter Form Of Government For the County Of Ulster, State Of New York) And Amending Local Law No. 10 Of 2008 (A Local Law Adopting An Administrative Code For The County Of Ulster, State Of New York), To Create Term Limits For Certain Ulster County Elected Officials

ADOPTED BY THE FOLLOWING VOTE:

AYES: 16 NOES: 5
(Noes: Legislators Donaldson, Gerentine, Greene, Maio, and Wawro)
(Absent: Legislator Collins)

271 Setting A Public Hearing On Proposed Local Law No. 4 Of 2019, A Local Law Amending Local Law No. 2 of 2019, A Local Law Requiring Restaurants And Fast Food Service Establishments Provide Plastic Beverage Straws Solely Upon Request, To Include Plastic Stirrers, Plastic Cutlery And Condiment Packets, To Be Held On Tuesday, August 13, 2019 At 6:20 PM

MOVED TO CONSENT

295 Approving The Execution Of A Contract In Excess Of $50,000.00 Entered Into By The County – Securus Technologies, Inc. – Ulster County Sheriff

ADOPTED BY THE FOLLOWING VOTE:

AYES: 19 NOES: 1
(Noes: Legislator Bartels)
(1 Abstention: Legislator Woltman)
(Absent: Legislator Collins)

301 Creating One Full-Time Position And Amending The 2019 Ulster County Budget – Office For The Aging

Legislator Petit motioned, seconded by Legislator Greene, to amend the Resolution by adding an additional RESOLVED as indicated in bold font.

MOTION ADOPTED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

RESOLVED, that the position of Case Manager, Grade 14 will be dissolved when NYSOFA funding is no longer available, unless other state or federal funding is provided,

ADOPTED AS AMENDED BY THE FOLLOWING VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

302 **Approving The Work Order With The Dormitory Authority Of The State Of New York (DASNY) For Design and Construction Phase Services For Phase 2 Of Campus Roof Project For Hardenburgh Hall Related To The Campus Roofs Capital Project No. 489 – Campus Roofs And Amending the 2019 Ulster County Capital Fund – SUNY Ulster**

MOVED TO CONSENT

303 BOND **Authorizing Roof Reconstruction Of The Hardenburgh Hall At The Ulster County Community College Campus At SUNY Ulster Stone Ridge, In And For The County Of Ulster, New York, At A Maximum Estimated Cost Of $1,600,000, And Authorizing The Issuance Of $1,600,000 Bonds Of Said County To Pay The Cost Thereof**

ADOPTED BY THE FOLLOWING LONG ROLL VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

305 **Authorizing The Chair Of The Ulster County Legislature To Execute A Lease With Ulster Savings Bank For Space To Be Used By The Board Of Elections – Department Of Public Works (Buildings And Grounds)**

MOVED TO CONSENT

307 BOND **Authorizing The Issuance Of An Additional $42,000 Bonds Of The County Of Ulster, New York, To Pay Part Of The Cost Of The Construction Of A Service Shelter And Other Improvements At The Veterans Cemetery, In And For Said County**

ADOPTED BY THE FOLLOWING LONG ROLL VOTE:

AYES: 21 NOES: 0
(Absent: Legislator Collins)

MEETING ADJOURNED IN MEMORY OF: Read by Legislator Gerentine and paying tribute to colleague James F. Maloney, Ulster County Legislator, District No. 4.

Legislator James F. Maloney, Town of Ulster, NY
Cosmo D. Fabiano, Saugerties, NY
Todd K. Caskey, Saugerties, NY
Paul H. Pitt, Ulster Park, NY
Francis Lawless, Saugerties, NY
Marc Adin, Port Ewen, NY
Lana Gesmundo, Newburgh, NY
Frances Caruso, Glasco, NY
Irving Linzey, Saugerties, NY
Anthony L. Amato, Saugerties, NY
Barbara Klueber, Rosendale, NY
Herbert A. Zaccheo, M.D., Ulster Park, NY
Eric W. Munson, Highland, NY
Joan A. Mahoney, Alexandria, VA
John Bowman, Esopus, NY
John Sansalone, Gardiner, NY
Debra Graziano, Washingtonville, NY
Glenn Kuriplach, Saugerties, NY
Todd Caskey, Saugerties, NY
Corrine J. VanBenschoten, Saugerties, NY
Philip Koch, Kingston, NY

Motion by Legislator Litts, seconded by Legislator Donaldson to adjourn Legislative Session.
All in favor.

MEETING ADJOURNED: 8:37 PM

NEXT MEETING:

The next Regular Meeting of the Ulster County Legislature will be held on **August 20, 2019 at 7:00 PM** in the Legislative Chambers, Sixth Floor, Ulster County Office Building, 244 Fair Street, Kingston, New York.

Resolution deadline is **Wednesday, July 31, 2019 at 12 Noon.**

ENVIRONMENTAL IMPACTS OF THE PROPOSED 850 ROUTE 28 CONCRETE AND STEEL PROJECT

VICTOR C. CAPELLI

The proposed concrete and steel manufacturing plant on Route 28 by Tom Auringer that would put up two 120,000 square foot buildings and cut down more than 21 acres of wild forest adjacent to the 3,000 acre Bluestone Forest is a "clear and present danger" to the environmental health and integrity of the neighboring Catskill Park and Preserve. The following is only a few of the potential environmental, health, safety, and aesthetic impacts that this concrete and steel manufacturing plant will inflict upon the surrounding forest, especially the nearby Bluestone Forest ecology and recreational tourism that is so dependent on a pristine and natural landscape.

- The constant blasting, crushing and sifting of stone 12 hours a day for at least 18 months will assault the delicate ambiance of the forest ecosystem because it causes massive noise, dust, truck/ vehicle pollution, chemical spills on roadways and widespread ecological disturbance on a fragile network of natural aquatic and terrestrial systems.

- **"Heat Island effects"** from more than 40 acres of impervious blacktop or concrete will aggravate local and delicate "micro niche climates." which are crucial to the stability of plant and wildlife communities in the nearby wetlands. These local eddies of thermal heat pockets created by the thermal radiation of concrete, blacktop and cement create more unstable Catskill weather patterns such as "rain-bombs" thunderstorms with downbursts and flash floods. Industrial heat islands during the summer raise the temperature 10 to 20 degrees higher than the surrounding cooler forest and promote the growth of more "heat tolerant" tree and plant species such as Alianthus, Box Elder, Mugwort, poison ivy, Japanese knotweed, Japanese Stiltgrass ,ragweed, and other plant invasives - thrive in hot and dusty environments. Invasive plant colonization will be stimulated by this project and further **degrade the** nearby **natural ecology** of the Catskill Park and Preserve.

- **Massive water drawdowns** of more than 3,000 gallons of water a day (estimated 2,000 gal a day needed for manufacturing and 900 gallons a day for septic use) could seriously **deplete the local water table** supplying nearby Onteora Lake and the connected wetlands and nearby residential or farming districts-especially critical, since we no longer have spring snow and ice melt water recharge that is sufficient to keep Catskill streams and creeks full during the summer and fall months. The winter snowpack in the Catskill mountains is diminishing, which in the past appreciably contributed to the spring "overturn" or mixing of pond or lake water layers(the stratification)-so crucial to the aquatic ecosystems of the Catskills. A daily usage of 3,000 gallons of water taken from 3 wells(two new ones in addition to the old one), at a rate of 5-10 GPM over the course of the 18 month construction and manufacturing period, is a serious drawdown that could **produce "cones of depression"** from nearby wells and impact the entire Route 28 corridor.

- **The clouds of concrete dust,** produced from blasting or rock crushing , entering the air, will settle down on Onteora Lake, Pickerel Pond and the nearby wetlands and **create an inorganic "film"** of particulate matter. This will hinder the photosynthetic processes of the phytoplankton in the lake ecosystems. Filamentous green algae, diatoms, desmids, rotifers, and other microscopic organisms inhabiting these lakes are the basis of the lake and pond "food chains" that underpin the entire fisheries ecosystem. Many of the skeletons that make up the bodies of the zooplankton which feed on the phytoplankton have very delicate siliceous shells and are highly susceptible to any physical or chemical changes to the specific gravity of the lake's water layers and to the temperature, oxygen, light and currents that make up the lake's chemical and physical profile. Since Onteora Lake is such a shallow lake, (20 feet at its northern end), the delicate vertical "stratification" of **the phytoplankton will be disrupted by the addition of aerial transported dust produced by the concrete manufacturing process**. Since phytoplankton and zooplankton exhibit a 24 hour cycling and seasonal vertical migration, any kind of physical change, such as a **concrete film on the surface waters**, is a potential threat to the entire ecosystem. Since phytoplankton in the Spring take advantage of the added nutrients from the decomposition of organic matter from the lake bottom, the "phytobloom" and the seasonal increase of sunlight speeds up the photosynthesis of blue-green algae-any potential increase in aerial nutrients could upset the aging timetable of Onteora lake, and **hasten the eutrophication process. The depletion of the dissolved oxygen in the lake** would be a direct casualty of this speeded up eutrophication process, leading to fish size stunting and a reduction of fish stocks (summer fish kills) and biodiversity. Fish species composition will change in Onteora Lake as a result of this **aerial dust pollution**-leading to more "trash species" such as carp, catfish or sunfish versus predator or "sport" fish such as Muskellunge, Northern Pike or Pickerel. **A profound biological change will occur in Onteora Lake**, resulting in an increase in anaerobic bacteria in the bottom layers of the lake and an increase in organic muck rich in methane and hydrogen. **The biological profile will be irreparably damaged** and will result in a **serious decline of recreational fishing** in Onteora Lake. Any chronic change to the atmosphere, including the effects of climate change on ambient atmospheric temperature increases, speeds up eutrophication and disturbs the stability of lentic systems. This is a known fisheries biological fact. Since Onteora Lake is a DEC stocked lake, DEC should be contacted in order to analyze the potential damage to Onteora Lake fisheries and the Esopus watershed. No industrial process should be allowed to damage or interfere with such valuable natural resources.

- The proposed concrete manufacturing plant also violates the goals of the Bluestone Management Plan by disturbing the "ecological stability" of state preserve lands, such as in the Catskill Park and Preserve. This project is "incompatible" with the "natural resource and communities of the region" (Bluestone Forest Unit Management Plan-1997) because it allows a highly destructive industrial project to proceed on the doorstep of protected fragile forests and wetlands (KW2 and KW3). Since the type 2 and type 3 wetlands are almost contiguous with

the concrete plant site, the environmental disruption will be significant. Type two wetlands contain vernal pools and emergent marshes (purple loosestrife and phragamites constitute two thirds of the cover type) that are home to many species of amphibians, reptiles, birds and must have at least 100 feet of buffer to protect them from any man made disturbance or destruction. They are "regulated wetlands" and falling under the regulating jurisdiction of NYS DEC . There are also Type 3 Wetlands next to Onteora Lake that contain deciduous swamps, shrub swamps, floating vegetation on open water and is the "resident habitat of an animal species (Eastern Bog Turtle) vulnerable in the major region of the state in which it is found." Onteora Lake and the associated wetlands are also "part of a surface water system with permanent open water and it receives significant pollution of a type amendable to amelioration by wetlands". In this case, the storm and site runoff will seep into the upper layer of the soils. The Type 3 wetland is in the Bluestone Forest, which is also "open to the public." The Type 3 Wetland also qualifies as an "open space function". As it is part of the Bluestone State Forest, it has "one of the largest wetlands of the same cover type within a town." Wetlands are a crucial part of our natural environmental protection system, an ecosystem "service" -which provides water filtering and purification of our local water table supplies. There are only about 2.4 million acres of wetland left in New York State. **The Route 28 project is a threat** to these valuable resources and must be challenged, if only **to** protect **the water supplies of the town.**

- DEC is also suppose to view land acquisition by industry in the Catskill Park and Preserve "conservatively" and to "avoid potential impacts" and to "protect rare and endangered species." How sure are we to know that this industrial project will endanger or extirpate possible plant and animal species living in the wetland habitats adjacent to the project sites? By allowing this project to go forward, DEC weakens the stated goals of the Bluestone Wild Forest Management Plan.

- Of the seventeen known species of turtle in New York State, the **Eastern Bog Turtle** is a New York State Endangered Species and a Federally Threatened Species that is found in only 74 locations statewide but only one quarter of these sites actually have stable reproducing populations. The Bluestone Forest associated wetlands is one such bog turtle habitat. Since it prefers wetlands with deep muck soils, wet meadows or open calcareous bogs with sedges or sphagnum moss, the risk of their habitat destruction rises every year with the threat of any industrial or agricultural development. This project will cause more disturbance through the destruction of more than 21 acres of forest and impact the wetland ecology. Invasive species immigration will be stimulated into the wetlands. Invasive plants such as Purple Loosestrife and Phragmaties are known to take over Bog Turtle habitat. The site construction will certainly encourage invasive plant immigration into the nearby protected wetlands. Any known industrial disturbance that degrades the Bog Turtle habitat, either through direct destruction, pollution of the water or the development of roads that hinder migration of Bog Turtles (the access roads to the site is one such obstacle)to and from their breeding areas will reduce the population to non-sustainable levels. Any new stress on extant habitats will further **diminish the numbers of Bog Turtles.**

- Cutting down the peripheral scrub pine forest, near the 3,000 acre Bluestone Forest, is another environmental stress on the nearby Catskill Park and Preserve. It will increase the overall disturbance factor of the adjacent forest. It will **encourage the growth of aggressive invasive "ecotone" forest species** like ailanthus, gray birch, quaking aspen, pin cherry and Japanese Knotweed to take over from the previous pitch pine scrub forest. This "replacement effect " of disturbance, like much of the other environmentally degrading influences of residential development, roads, logging and other human activities in the Catskills, only worsens the overall forest health by a process called **forest "aridification."** Mature climax tree species such as pitch pine living on hard bedrock or mature forest species such as Red Oak, Black Oak or Chestnut Oak or Sugar Maple are increasingly put under pressure to migrate out of the area because of the changing forest canopy brought on by logging, agricultural practices, road creation or residential development.

- The 850 Route 28 project **reduces the forest species biodiversity** of the surrounding forest by encouraging only the most adaptable forest species; the shade intolerant species or" invasives" to take over as the dominant forest canopy tree species. As more logging occurs and the boundary of disturbance expands outward, the "ripple effect" of the industrial "ecotone" advances into the forest with the result that there is a notable loss of tree biodiversity. Accompanying this loss of forest biodiversity is the associated **loss of woodland plant communities** and their soil micro niches that support them. Cumulatively, over time, this "forest aridification" has an effect of also reducing the contribution of atmospheric water via transpiration to the local aquifer. One single mature tree, such as a sugar maple transpires as much as 1,000 gallons of water a day. As in the tropics, where massive tree cutting has resulted in barren hillsides, the water supply of fresh ground water has also been greatly compromised by the effects of forest removal, forest "aridification "and disturbance. Forests create climate and mitigate the effects of drought by creating shade and transpiration. The cumulative ecological effect of the Route 28 project will be the **reduction of water to the Bluestone Forest Watershed.**

- Another biological effect on the surrounding Bluestone Forest and the scrub forest of the quarry will be the forced emigration of wildlife away from the area as the blasting, crushing, truck road traffic, the activity of factory personnel and construction creates a highly chaotic "no man's land", ecotone of invasive plants, trees and shrubs, that will quickly alter the profile of breeding bird profiles of resident birds and migratory neo-tropical songbirds that nest in the deciduous and scrub woods forests nearby. This emigration will produce species population "ripples" that will propagate through the Bluestone Forest and result in a population loss of already neo-tropical warblers, vireos, tanagers, thrushes and other migratory songbirds. Populations of neo-tropical bird species such as the Ovenbird, Hermit or Swainsons Thrush that require large areas of deep undisturbed and mature forests of either oak, maple basswood or hickory as breeding habitat, will leave, as refugee bird species fleeing the industrial site -are

forced to compete with them for shrinking forest resources such as food, nesting habitat and protective cover. Since neo-tropical bird species are migratory to areas like Central and South America and the Caribbean Islands during the winter and compete with native tropical species - for shrinking resources that have already been destroyed by deforestation, agriculture and development-their reproductive success here in the Catskills are further compromised by this industrial activity. More than a third of all neo-tropical birds species that nest in New York and the northeast have endured severe population declines in the past 50 years because of deforestation of their overwintering grounds in the tropics and because - "forest fragmentation" of virgin forests have eliminated thousands of acres of potential breeding habitat; forever lost to human development, malls and industry. **This project will** further **stress the native and migratory bird species** that make their homes here in the Catskill Park and Preserve.

- Another and less obviously stated and perhaps pernicious effect of this project will simply be the **increased exhaust fumes** from more than a 100 daily entering and exiting dump trucks carrying tons of crushed stone, the noise permeating the beauty of the Catskill woods, the associated **industrial noise**, **blasting** and chaos infesting this entire part of the Route 28 Corridor will totally destroy another part of the Catskills, which cannot be replaced. **The litter** and **the garbage** being left in the wake of the project will further "dirty" the picture of a serene and beautiful landscape made famous by the Hudson River School of Landscape Painting back in the Nineteenth Century. Do we really want to sully the sight of a magnificent sunset over Slide Mountain with the smoke and air pollution of a concrete manufacturing plant? Simply put, this project will stamp an even greater "human footprint" on the Catskill Park and Preserve that 60 full and part- time jobs could not possibly justify.

- Potential **industrial chemical hazards** such as the storage of Gasoline, Diesel, solvents, propane, acetylene, lubricants, toxic heavy metals such as Thallium, Cadmium and Mercury, all used in the concrete manufacturing process and stored on site could conceivably be another danger to the water resources and indeed to very safety of employees and residents. In addition to these chemicals associated with concrete manufacture are also chemicals which refine the production and finishing of the concrete such as polycarboxylates, Melamine Sulfanate, VMAS or Vioscosity Modifying Admixtures that "improves water tolerance," and Rheology Modifying Admixtures" for improved formed finishes, "Shrinkage Reducing Admixtures," Internal Curing Admixtures (ICA'S),(used for high performing concretes such as concrete beams) Naphthalene, condensates, Muriatic Acid, Reactive Release Agents using petroleum based products, cleaning chemicals used for steel and curing agents, Type S Admixtures, Concrete Stabilizers, Barrier Release Agents which prevents adhesion of a physical film between the casting mold surface and the concrete are also used. But these are just some of the chemicals used in the concrete industry that could be on site for the project and therefore should have been listed in the application. **All are hazardous to humans, not to mention the natural environment.** Their nature and toxicity levels should be made known to the general public of the community and their potential health hazard. Of concern, like many other toxic waste sites across New York

State, this project could conceivably become another "Love Canal" Super Fund site that will permanently scar the area with unacceptable environmental damage. Septic system problems and solid waste transport are also another source of site contamination which could ramify into the surrounding forest ecology and watershed.

- Another corollary fact is that since the stream exiting from the drainage ponds is a "protected stream" and is a tributary of the Praymaher Brook-they are all connected. Praymaher Brook is considered by DEC as an "impaired water body" and it makes no sense to further **degrade** the biological integrity of the stream which feeds into **the Esopus Creek** by allowing compromised water from the industrial site to enter the Esopus stream network.

- **Human health hazards such as "silicosis" from the breathing of the concrete dust**, an increase in asthma incidents for the concrete worker and for nearby residents are all potential industrial risks that far outweigh any short term monetary gain from employment there.

SUMMARY

In the final analysis this project is a non-starter because there are just too many "costs" to the natural environment that the concrete manufacturing project will produce.

Respectfully Submitted,

Victor C. Capelli
July 16th 2019

Good afternoon legislators. My name is Andrew Pezzullo and I live here Kingston. I work in energy policy for an organization called food and water watch. What you need to know about me is that I support energy development. What I don't support is foolhardy, dangerous, and unnecessary investments in energy that create more problems than they solve.

I've spoken with a number of you about the severe and long-lasting impacts of the Danskammer fracked gas power plant proposal for the town of Newburgh and wanted to thank those who have signed on to an elected official sign on letter to governor Cuomo and Public Service Commission asking them to use their authority to deny permits for the construction of the new Danskammer power plant. That sign-on letter now has over 65 signatories, including our state senator Jen Metzger, from the senate, assembly, and municipalities throughout the state.

It's come to my attention that Danskammer LLC presented to the Environmental Management Council of Ulster County, and though I was not present, and can't speak to specifically to the arguments offered in support of the proposal. I would like to speak to a number of unintentional or intentional obfuscations about the need, impact and consequences of the project. I hope to be brief, but would surely accept an invitation to speak in a more detailed manner if the legislature was so inclined.

1) Let's address the question of demonstrated need for the proposed project. Nothing in public reports either commissioned by outside organizations or NYISO points to a need for a baseload gas facility. In late 2017, a report was released by SYNAPSE economics, commissioned by Riverkeeper, and accepted by NYISO, that conclusively states that, with modest improvements in energy efficiency and transmission, no new power plants are needed after the decommissioning of Indian points final reactor in 2023. This report states that 100 new MW of generation are need in 2023, and 600 new megawatts are needed by 2027. Both energy deficits can and will be met by energy efficiency and transmission improvements. Actually, we have decreased our total reserve capacity need in NY since 2014 by over 2300 MW thanks to strong leadership from folks like you on the county and municipal level and with the adoption of behind the meter energy improvements like residential solar.
   You might say, that's an old report, 2017, haven't things changed since then. Yes, in 4 very consequential ways. 1) Two new fracked gas power plants, CPV in Wawayanda and Cricket Valley, under construction in Dover Plains, have been built or are being built. Neither was included in the report's findings. Those two plants alone more than cover any energy deficit left by Indian point. 2) NYISO's 2019 Power Trends report shows that New York's energy use has already started to decline and is projected to continue falling through 2030 (and almost surely beyond) 3) Governor Cuomo is slated to sign one of the most aggressive pieces of climate change legislation in the world, which passed in the NY senate and assembly last session. The aggressive goals for emissions in this bill call for 70% electricity generation from renewable resources by 2030. We will surely not meet those goals if we allow Danskammer and similar fossil fuel projects to be built. 4) Electricity transmission improvements are already underway to remove the bottleneck in transmission and allow massive amounts of MW to flow from already available and in many cases mostly renewable energy upstate, like hydropower from Niagara.

2) Natural gas is not a "bridge fuel". All of the most recent scientific research shows that, with full cycle accounting, from the drilling of the fracked wells, to transportation, to burning, fracked gas produced substantially more heat trapping greenhouse gases than coal or oil. Fugitive methane, the primary gg emission of fracked gas production, is 87-100 times more heating trapping than carbon dioxide. There is absolutely no reason to continue focus energy development on natural gas.
3) Danskammer posits that improved technology from the old peaker plant will mean less emissions and pollution. Yes, per MW, the new plant, with some new scubbers and filters, will produce less pollution and emissions. What they seem to skip over in their presentation is that the proposal is to run the new facility as a baseload rather than a peaker plant. It will be running 60-90% of the time, rather than 3-10%. Therefore, even with technological improvements, the plant will emits 9-10 times more air pollution and emissions. Radon, Benzene, Ozone, and Nitrous Oxide will be emitted at 9-10 times the rate in the lower Hudson valley, a couple miles from the already economically and environmentally disadvantaged community of Newburgh and in counties that already receive a D rating from the American lung association.
4) Now let's talk about the economics of the project. Danskammer representatives have admitted, privately and publicly, that without rate-payer subsidized capacity payments, which stem of FERC's designation of the lower Hudson valley capacity zone in 2014, their power plant is non-economical and would go bankrupt. The plant flooded in superstorm sandy, Dynegy, the company who owned the site prior went bankrupt, filed for tax abatement in the town, and left the Marlboro consolidated school district in the lurch. It seems to me an Einsteinian problem. Albert Einstein said, to continue to do the same thing, in the same place and expect different results is the definition of insanity. In the last 6 months, we have seen two gas power plants in NY, one in Rensaelaer and one in Athens go bankrupt and shutter. The one in Athens happens to be the third newest plant in NY after CPV and Cricket Valley. This plant is a blueprint for bankruptcy.
5) Floodplain: the proposed plant is going to be built 8 ft higher than the old flooded site, which Danskammer conclusively says is out of the floodplain. What they are not telling you is that they're using 2013 FEMA floodway maps which haven't been updated since that time. If you are to use the most current floodway data, like that from Columbia university even the new site is well-within the floodway. Diesel and aqueous ammonia will be stored on site and pose a serious risk to the health of our watershed if they happen to spill in the Hudson River.

It will take strong and committed leadership from elected officials like you to steer NY's regional energy policy towards investments that solve problems, towards investments that offer durable economic and environmental return to our communities and to the region. Danskammer, by all accounts, is not one of those. Please sign the elected official sign on letter to Governor Cuomo and the PSC, and like many municipalities in Ulster County, pass a memorializing resolution in opposition to the Danskammer.

HISTORY of LABOR ABUSE: In a well- documented report issued by the NYC Community Alliance for Worker Justice the Auringer companies are aptly described with a title "Exploitation at Every Level". The report goes on to say "Auringer Companies have a record of irresponsible behavior against workers, their health and safety, and the greater community. Workers say they are subjected to a number of abuses including wage theft, racism, discrimination, mistreatment, and frequent retaliation by supervisors." The report goes on to say "Adding insult to injury workers do not receive health insurance, retirement, paid time off, or other benefits."

SAFETY VIOLATIONS – Over the last decade, in the course of over 2 dozen investigations, OSHA has cited Auringer companies with over $300,000 in initial fines for almost 5 dozen serious violations.

WAGE THEFT – 2009 – 50 workers filed complaints with the Department of Labor about 3-4+ weeks worth of unpaid wages. Workers who complained were fired.

WAGE THEFT - 2013 - Over 3 dozen workers joined in a class action suit alleging systematic wage theft. Workers say they were consistently missing hours from their paychecks every week.

DISCRIMINATION in the WORKPLACE – 2015 Complaint filed with the Equal Employment Opportunity Commission (EEOC) alleging racial and sex discrimination.

In 2017 the Auringer companies began initiating projects in the Hudson Valley. Todd Diorio, President of the Hudson Valley Building and Construction Trades Council, in opposition to a proposed Auringer project in Orange County, said "There's been a very bad track record from Department of Labor issues, safety violations and discrimination. We don't think this is a good company" Eddie Jorge an organizer with the Worker's Alliance said "There are plenty of good reasons Thomas Auringer companies should not be welcome in the mid-Hudson.

The Electromagnetic Spectrum

The Electromagnetic Spectrum, as this chart shows, takes in the span of frequencies from normal household AC current to X-rays and Gamma rays. The greater the number of cycles per second, the higher the frequency is of the electromagnetic signal, and this frequency of cycles is referred to in numbers of "Hertz."

The frequencies involved in our standard AC electrical currents generate electromagnetic fields – EMFs. Household AC at 50 to 60 Hertz is referred to as producing Extremely Low Frequency, ELF fields. The terms used change as the frequency increases, (see the chart):

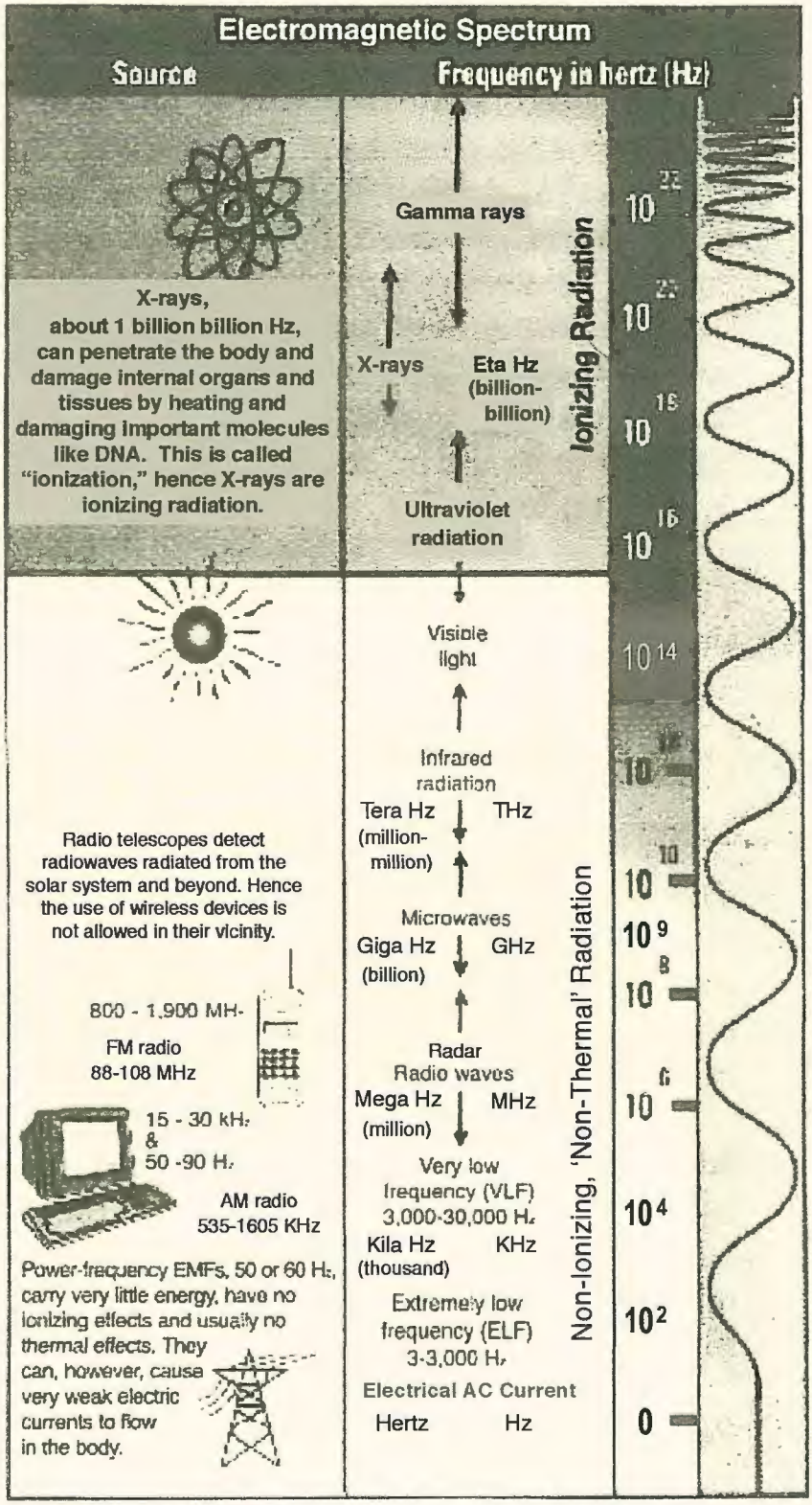
Extremely Low Frequency, ELF
– indicated in *Hertz, Hz*
Very Low Frequency, VLF
– indicated in *Hertz, Hz*
Radio Wave Frequency, RF
– indicated in millions of Hertz, *MegaHertz, MHz*
***(HF, VHF** and **UHF** are below 1 GHz)*
Microwave Frequency, MW
– indicated in billions of Hertz, *GigaHertz, GHz*

This should help demystify the Hertz designations given on wireless devices.

As can be seen, at *1 billion billion Hz,* **X-rays** penetrate the tissues of the body and cause damage through heating and the ionization of DNA. Hence these frequencies are called ionizing radiation.

Radiation in frequencies below visible light down to ELF do not cause damage to bodily tissues through ionization and *overt* heating. Therefore, these frequencies are called non-ionizing and 'non-thermal' radiation. For a long time it was put forth that these radiations simply do not and cannot damage tissues or interfere with bodily functions, though quite the contrary was already known. Decades ago, in 1971, the U.S. Office of Naval Medical Research issued a report documenting over 100 medical effects as consequences of these radiations, many of them serious – such as reproductive problems and DNA damage, cognitive, emotional and psychological disorders. It is now known that these non-ionizing frequencies trigger the Voltage-Gated Calcium Channels in the cell membrane. These frequency-sensitive VGCCs are key regulatory mechanisms in bodily systems, such as for the heartbeat and for the production and regulation of many hormones and all of the neurotransmitters. To begin learning about this, just search for the short YouTube, "Wireless Radiation Causes Health Effects Via VGCC: Dr. Martin Pall PhD." Dr. Pall brings together the research results from over 20,000 studies.

Canaries in the Mine



Credit is gratefully given to CellSensor™ for the help of this chart, which has been improved with important frequency identifications for use here along with a detailed text to accompany it. The CellSensor™ is a rudimentary and inexpensive hand-held EMF/WiFi detector.

Be Wise: Downsize Your EMFs and WiFi

3G/4G lower, longer range wireless radiation goes up to about 2.6 GHz.
5G test radiation, higher, shorter range, is said to have used 15 GHz.

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Review

Microwave frequency electromagnetic fields (EMFs) produce widespread neuropsychiatric effects including depression

i.e. they are causal to these disease conditions ◦ See p. 46 here

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ABSTRACT

Non-thermal microwave/lower frequency electromagnetic fields (EMFs) act via voltage-gated calcium channel (VGCC) activation. Calcium channel blockers block EMF effects and several types of additional evidence confirm this mechanism. Low intensity microwave EMFs have been proposed to produce neuropsychiatric effects, sometimes called microwave syndrome, and the focus of this review is whether these are indeed well documented and consistent with the known mechanism(s) of action of such EMFs. VGCCs occur in very high densities throughout the nervous system and have near universal roles in release of neurotransmitters and neuroendocrine hormones. Soviet and Western literature shows that much of the impact of non-thermal microwave exposures in experimental animals occurs in the brain and peripheral nervous system, such that nervous system histology and function show diverse and substantial changes. These may be generated through roles of VGCC activation, producing excessive neurotransmitter/neuroendocrine release as well as oxidative/nitrosative stress and other responses. Excessive VGCC activity has been shown from genetic polymorphism studies to have roles in producing neuropsychiatric changes in humans. Two U.S. government reports from the 1970s to 1980s provide evidence for many neuropsychiatric effects of non-thermal microwave EMFs, based on occupational exposure studies. 18 more recent epidemiological studies, provide substantial evidence that microwave EMFs from cell/mobile phone base stations, excessive cell/mobile phone usage and from wireless smart meters can each produce similar patterns of neuropsychiatric effects, with several of these studies showing clear dose–response relationships. Lesser evidence from 6 additional studies suggests that short wave, radio station, occupational and digital TV antenna exposures may produce similar neuropsychiatric effects. Among the more commonly reported changes are sleep disturbance/insomnia, headache, depression/depressive symptoms, fatigue/tiredness, dysesthesia, concentration/attention dysfunction, memory changes, dizziness, irritability, loss of appetite/body weight, restlessness/anxiety, nausea, skin burning/tingling/dermographism and EEG changes. In summary, then, the mechanism of action of microwave EMFs, the role of the VGCCs in the brain, the impact of non-thermal EMFs on the brain, extensive epidemiological studies performed over the past 50 years, and five criteria testing for causality, all collectively show that various non-thermal microwave EMF exposures produce diverse neuropsychiatric effects.

A few definitions:
dysesthia - impaired sensation (e.g. of vision, hearing, smell, etc.)
histological - refers to the microscopic structure of tissues
polymorphism - occurance of multiple forms or stages
dermographism - skin reactivity in which touching or light scratching results in raised reddening or hive-like symptoms
non-thermal - the radiations do not cause overt heating as do X rays

Contents

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Chemicals having roles:

Calcium(2+)
Nitric oxide (NO)
Oxido nitrite (peroxynitrite)

1. Introduction

Microwave syndrome (Hocking, 2001; Johnson Liakouris, 1998), a combination of various neuropsychiatric symptoms originally described in persons with occupational exposures to microwave frequency EMFs, has been disputed largely because of the lack of an apparent mechanism for generating these symptoms. It is reported to often include such symptoms as fatigue, headache, insomnia, dysesthesia (impaired sensation), irritability, lack of concentration and other symptoms (Hocking, 2001; Johnson Liakouris, 1998). Similar but more extensive combinations of symptoms have been reported following occupational exposures in two U.S. government reports from the 1970s/1980s (Naval Medical Research Institute Research Report, 1971; Raines, 1981) and following environmental exposures as described in two more recent reviews (Khurana et al., 2010; Levitt and Lai, 2010).

The goal here is not just to review the epidemiology, however, but more importantly to consider the issue of possible physiological mechanism(s). Hennekens and Buring (1989), on p. 40 in their textbook Epidemiology in Medicine state "The belief in the existence of a cause and effect relationship is enhanced if there is a known or postulated biologic mechanism by which the exposure might reasonably alter risk of developing disease." It is of critical importance therefore to assess possible biological mechanism before considering the epidemiological evidence.

Accordingly, this paper considers the mechanism by which low intensity microwave EMFs impact the cells of our bodies, how that mechanism may be predicted to impact the nervous system, evidence for such impact from experimental animal studies, genetic polymorphism evidence for that mechanism acting in humans to produce neuropsychiatric effects and finally, the epidemiological evidence for such effects in human populations with repeated low level microwave EMF exposure. Consideration of each of these types of evidence influences the overall interpretation presented in this paper.

2. Microwave/lower frequency EMFs act to activate voltage-gated calcium channels

In 24 different studies reviewed earlier (Pall, 2013) and two additional studies (Li et al., 2014; Lisi et al., 2006), microwave and lower frequency low intensity EMF effects were blocked or greatly lowered by calcium channel blockers, agents thought to be specific for blocking voltage-gated calcium channels (VGCCs). In these 26 studies, a total of 5 distinct types of channel blockers were used, with each type having a distinct structure and binding to a distinct site, such that it is essentially certain that these must be acting by blocking VGCCs, which is their only known common property. In each of these 26 studies, each of the responses studied, were blocked or greatly lowered by calcium channel blockers, showing that VGCC activation has roles in producing a wide variety of EMF effects. There is a large literature on changes in calcium fluxes and in calcium signaling following microwave EMF exposure (partially reviewed in Walleczek, 1992; Adey, 1993); each of these, including calcium efflux changes, can be explained as being due to VGCC activation, again suggesting a widespread role of VGCC activation in producing biological responses to EMFs. Pilla (2012) showed that pulsed microwave field exposure, produced an almost instantaneous increase in calcium/calmodulin-dependent nitric oxide (NO) signaling, providing strong evidence that these fields can produce an almost instantaneous VGCC activation. It is likely, that these EMFs act directly on the voltage sensor of the VGCCs to produce VGCC activation (Pall, 2015) with the voltage sensor being exquisitely sensitive to these EMFs because of its physical properties and location in the plasma membrane.

EMFs have been proposed to act to produce a wide variety of responses in the cell, via downstream effects of VGCC activation (Pall, 2013, 2014, 2015), including elevated intracellular calcium [Ca2+]i, excessive calcium and nitric oxide signaling and also excessive peroxynitrite, free radicals and oxidative stress.

VGCC activation has been shown to have a universal or near-universal role in the release of neurotransmitters in the brain and also in the release of hormones by neuroendocrine cells (Berridge, 1998; Dunlap et al., 1995; Wheeler et al., 1994), with such release being produced by calcium signaling. There are high densities of diverse VGCCs occurring in neurons throughout the nervous system. Both the high VGCC density and their function in neurotransmitter and neuroendocrine release throughout the nervous system suggests that the nervous system is likely to be highly sensitive to low intensity EMFs.

3. Genetic polymorphism studies

Genetic polymorphism studies are powerful tools for looking at the roles of specific proteins in human populations. In Table 1, a series of genetic polymorphism studies have been performed that show that an allele producing increased expression of the gene encoding the channel of the main L-type VGCC in the brain, produces diverse neuropsychiatric effects. These studies clearly show that excess L-type VGCC activity can cause neuropsychiatric effects. They also predict, therefore, that increased VGCC activity produced by microwave EMFs may be able to also produce widespread neuropsychiatric effects.

4. Histological and functional changes in central nervous system (CNS) and peripheral nervous system (PNS) in animals exposed to microwave EMFs

The most extensive literature on histological and functional changes in animals is from the Soviet literature from the 1950s/1960s with additional Western literature from the same time period. Both Soviet and non-Soviet literature were reviewed in an English language Publication by Tolgskaya and Gordon (1973). This publication is, therefore, the main focus of this section. That publication was divided into thermal and non-thermal exposure studies, with the non-thermal studies which occupy the majority of the text (pp. 53–137) being of sole interest here.

Table 1
Influence of genetic polymorphism of the CACNA1C in producing diverse neuropsychiatric effects.

Citation	Genetic polymorphism	Changes produced by allele of gene
Bhat et al. (2012)	Polymorphism producing Increased expression of CACNA1C L-type VGCC subunit	Review: The polymorphism is associated with increased susceptibility to bipolar disorder, "depression, schizophrenia, autism spectrum disorders, as well as changes in brain function and structure in control subjects who have no diagnosable psychiatric illness."
Bigos et al. (2010)	Polymorphism producing Increased expression of CACNA1C L-type VGCC subunit	Associated with increases in both bipolar disorder and schizophrenia
Krug et al. (2010)	Polymorphism producing increased expression of CACNA1C L-type VGCC subunit	Negatively influences language production on a semantic level
Krug et al. (2014)	Polymorphism producing increased expression of CACNA1C L-type VGCC subunit	Influences episodic memory and retrieval
Soeiro-de-Souza et al. (2012)	Polymorphism producing increased expression of CACNA1C L-type VGCC subunit	Produces impaired facial emotion recognition
Tesli et al. (2013)	Polymorphism producing increased expression of CACNA1C L-type VGCC subunit	Produces increased activation of the amygdala during emotional processing
Thimm et al. (2011)	Polymorphism producing increased expression of CACNA1C L-type VGCC subunit	Associated with attention deficits including alerting, orienting and executive control of attention

These were all derived from the Tolgskaya and Gordon (1973) review and page numbers listed are page numbers from that document. All refer to changes produced by non-thermal exposures in the nervous system of experimental animals, with most being in rats.

This discussion scrolls down through Table 2.

The majority of the histological changes seen in these mostly rodent studies, are seen in the nervous system, despite its being less than 2% of the rodent cell mass. There are statements made that the nervous system, both central and peripheral, is the most highly sensitive tissue to these non-thermal microwave and lower frequency EMFs. Following the nervous system in sensitivity are the myocardium and the testis; myocardial cells are known to have very high densities of VGCCs with especially high densities in the pacemaker cells and the testis is known to have high densities specifically of the T-type VGCCs. Pulsed EMFs are more active in producing histological changes in the brain than are non-pulsed fields, in two studies reviewed; there is a much larger literature showing that in most cases pulsed fields are more biologically active (Pall, 2015; Pangopoulos et al., 2013; Belyaev, 2015).

A wide variety of brain and peripheral nervous system tissues show histological changes following non-thermal exposures. Among the important tissues impacted are the hypothalamus and pituitary gland, where both show similar patterns of changes in neuroendocrine activities. There is an initial increase in neuroendocrine activity (this may be produced directly by VGCC stimulation of secretion), followed over time by "exhaustion" of neuroendocrine activity (this may be produced by tissue damage produced from long term intracellular calcium [Ca2+]i elevation).

There are widespread histological changes produced in neuronal and neuroendocrine tissues. These were repeatedly reported to be largely reversible on cessation of EMF exposure. They become, however, irreversible when exposure is extended in time. There are changes in EEG activity, which may be an easily measurable monitor of neurological damage.

In a summary statement, Tolgskaya and Gordon (1973) state, "This does not confirm the view, so widely held in the past among Soviet investigators and still maintained to a large extent even at the present time in the West, that the action of microwaves is entirely thermal."

While there were many studies of brain impact of non-thermal EMFs performed in the 1950s/60s that make the information content of Tolgskaya and Gordon (1973) quite high, there is also a substantial recent literature on brain effects of non-thermal microwave EMF exposures (see, for example: Ammari et al., 2008a,b; Bas et al., 2009; Brillaud et al., 2007; Carballo-Quintás et al., 2011; Eberhardt et al., 2008; Dasdag et al., 2009, 2012; Grafström et al., 2008; Kumlin et al., 2007; López-Martín et al., 2006; Mausset-Bonnefont et al., 2004; Odaci et al., 2008; Rağbetli et al., 2010; Salford et al., 2003; Sonmez et al., 2010).

5. Older epidemiological reviews and other related studies

Two U.S. Government reports each listed many apparent neuropsychiatric effects of microwave/radiofrequency EMFs and a third recognized the role of non-thermal effects on our bodies, but had only a little consideration of neuropsychiatric effects.

The earliest to these was a Naval Medical Research Institute (NMRI) Research Report (1971) which listed 40 apparent neuropsychiatric changes produced by non-thermal exposures including: 5 central/peripheral nervous system (NS) changes, 9 CNS effects, 4 autonomic system effects, 17 psychological disorders, 4 behavioral changes and 2 misc. effects. This NMRI report also provided a supplementary document listing over 2300 citations documenting these and other effects of microwave exposures in humans and in animals.

The Raines (1981) NASA report reviewed extensive literature based on occupational exposures to non-thermal microwave EMFs, with that literature coming from U.S., Western European and Eastern European studies. There are no obvious differences in the literature coming from these different regions. Based on multiple studies, Raines (1981) reports 19 neuropsychiatric effects to be associated with occupational microwave/radiofrequency EMFs.

The Bolen (1994) report put out by the Rome Laboratory of the U.S. Air Force, acknowledged the role of non-thermal effects of microwave EMFs on humans. This report states in the Conclusion section that "Experimental evidence has shown that exposure to low intensity radiation can have a profound effect on biological processes. The nonthermal effects of RF/MW radiation exposure are becoming important measures of biological interaction of EM fields." Clearly Bolen (1994) rejects the claim that only thermal effects occur. Bolen (1994) discusses a specific non-thermal neuropsychiatric effect, where anesthetized animals are awakened when the head is irradiated with microwave EMFs. This suggests a similar mechanism to that acting in humans where such EMFs produce insomnia (see below).

6. Specific epidemiological studies on neuropsychiatric effects of microwave EMFs

There are 26 different epidemiological studies described in Table 3. Although 4 of these only studied a single neuropsychiatric effect, 22 of these each provide substantial evidence for the pattern described in the earlier U.S. reports, that a wide range of

Table 2
Histological and functional changes in brain function in animals following exposure to non-thermal microwave EMFs.

Observations including page numbers	Comment from Author
The majority of the histological changes seen following non-thermal exposures, occurred in the nervous system, despite its being only about 2% of the tissue mass in rodents; this suggests that the nervous system is highly sensitive to such exposures. Elsewhere (pp. 129, 136), it is suggested that the nervous system is the most sensitive tissue, followed by the heart and the testis, among all of the tissues of the body. The most severe histological changes produced by these non-thermal EMF exposures occur in the nervous system (pp. 136).	High CNS sensitivity to EMFs is predicted by the high density of VGCCs that occur in neurons throughout the nervous system, plus the VGCC role in neurotransmitter and neuroendocrine release.
Pulsed fields were more active than non-pulsed fields in producing histological changes (pp. 71, 97).	Pulsed fields have often been found to be more biologically active than are non-pulsed fields in many different studies from many countries (Pall, 2015; Pangopoulos et al., 2013; Belyaev, 2015).
Nervous system regions impacted by non-thermal microwave and lower frequency fields include: cortex, diencephalon including the hypothalamus and thalamus, hippocampus, autonomic ganglia, sensory fibers, pituitary gland including neurohypophysis.	
Neuroendocrine changes seem to undergo change over increased time of exposure. Neurosecretion in the hypothalamus and in the pituitary each go through a complex sequence over time, where EMF exposure initially produces increased hormone secretion but where over time, the neurosecretory cells become "exhausted", leading to lowered secretion and in some cases cell death (pp. 77–96).	Elevated [Ca2+]i stimulates hormone secretion. However when such elevated [Ca2+]i occurs over extended time periods it is highly damaging to the cell, leading in some cases to apoptosis; thus this time course of action should not be surprising.
Histological changes include boutons/argyrophilia, smaller neurons, vacuole formation in neuroendocrine cells, bead-like thickening along dendrites (pp. 66, 70, 71, 73, 97, 98, 100, 111, 115–117, 121–125). Spines near the ends of dendrites become deformed and with still more sessions of irradiation, disappeared entirely (p. 70). Sensory neurons, following exposures, developed changes characteristic of irritation, with "marked tortuosity of the nerve fibers." Many histological changes are seen in the hypothalamic cells (pp. 87–92) as their neuroendocrine function becomes impacted. Histological changes were found even with exposures that produced no apparent functional changes.	
Many histological and functional changes are reported to initially be reversible, following cessation of exposure, but progressively become irreversible with longer exposure. (pp. 64, 72, 74). Paralleling the development of irreversibility, it is found that "Repeated exposure leads to gradual increase in severity of observed changes." ... including "increasingly severe disturbance of conditioned reflex activity in the animals, changes in responses of animals particularly sensitive to acoustic stimulation...." (p. 104).	If this is also true in humans, then claims that there cannot be non-thermal effects, claims which act to prolong exposures, may be causing irreversible damage to many humans.
EEG changes (pp. 55, 60, 102), including seizure activity following sensory provocation.	Lai (1997) has an extensive review of EEG changes in animals following non-thermal microwave EMF exposures
Neurodegeneration is reported in a number of places in this review (pp. 72, 83, 117).	
Synaptic connections in regions of the brain are disrupted (pp. 65–74, 97, 113, 121, 136), and at the extreme, some neurons are completely asynaptic (p. 73).	Synaptic connections are known to be disrupted in autism; could this suggest that autism may be generated by EMF exposure? No doubt, we need much more evidence on this.
"after prolonged and repeated irradiation with low-intensity centimeter waves, with no elevation of the body temperature and when the animal's condition remained satisfactory, changes were nevertheless found in the sensory fibers of the skin and viscera in the form of irritation phenomena. These findings concur with the view in the literature that the receptor system as a whole and, in particular its preterminal portions are highly sensitive." p. 76. This description is similar to what is reported to occur in electromagnetic hypersensitivity (EHS). Other such studies are described and include cumulative changes over time, that may also explain changes reported in EHS (pp. 75, 99, 100, 104).	One wonders whether almost 60 years ago, the Soviet literature may have already described a possible animal model for EHS. None is known to exist today, and because of that, EHS studies are severely constrained. Clearly one needs to be skeptical about this interpretation, but it is of great importance that this be further studied.

neuropsychiatric effects are produced by exposure to various non-thermal microwave frequency EMFs. Perhaps the most important of these 26 is the Santini et al. (2003) study of people living near cell phone base stations.

There are three recent studies on the generation of headache during or shortly following long mobile phone calls (listed under Chu et al., 2011 in Table 3). The timing of development of these headaches and the finding that they occur on the ipsilateral side of the head, the side receiving much higher EMF exposure during the call, both argue strongly that these headaches are caused by the long mobile phone calls. Such causality was concluded earlier by Frey (1998) based on earlier studies and is now still more strongly documented.

7. Criteria for assessing causality in epidemiological studies

It is important to consider the different criteria that allow one to judge whether a cause and effect relationship is justified by the studies listed in Table 3 and the individual studies cited in Raines (1981). There are five such criteria that should be considered in making that judgment (see pp. 39–43 in Hennekens and Buring, 1989):

Strength of Association: Is there a strong correlation between exposure and the neuropsychiatric symptoms? There clearly is for several studies cited in Raines (1981). One example is the Dwyer and Leeper (1978) study (see Table 3) where there is a large increase in symptoms and where that increase is greater with longer occupational exposure. Another example is the Lerner (1980) study of 1300 microwave workers, where workers with relatively low exposure levels had an approximate doubling of neurological complaints and where those with substantially higher exposure levels had an approximate tripling of neurological complaints over controls. Sadcikova (1974) found that 7 of 8 neuropsychiatric symptoms studied, showed a statistically significant rise in prevalence with longer occupational exposure (see Table 3). Sadcikova (1974), also found that microwave workers had increases of 3 to over 10-fold in: feeling of heaviness in the head; tiredness; irritability; sleepiness; partial loss of memory; and skin sensitivity. There is also a strong association where important new exposures occur – this is clearly the case with all of the studies of people living near cell/mobile phone base

Table 3
Neuropsychiatric symptoms apparently produced by exposure to various electromagnetic fields.

Citation	EMF exposure	Apparent neuropsychiatric symptoms
Abdel-Rassoul et al. (2007)	Living near mobile phone base station	Significant increases in neuropsychiatric complaints included: headache, memory changes, dizziness, tremors, depressive symptoms, sleep disturbance; attributed to effects of EMFs on the human nervous system.
Al-Khlaiwi and Meo (2004)	Mobile phone use	Higher prevalence of fatigue, headache, dizziness, tension and sleep disturbance; the authors conclude that mobile phone use is a risk factor for developing these symptoms.
Altpeter et al. (2000)	Short-wave broadcasting tower, ranging from 6.1 to 21.8 MHz	Sleep disruption shown to occur, correlated with exposures and apparent increase over time; short term suppression of melatonin shown, based on melatonin increases during a 3 day period when the tower was turned off.
Bortkiewicz et al. (2004)	Living near cell phone base station EMFs	Sleep disturbance, irritability, depression, blurred vision, concentration difficulties, nausea, lack of appetite, headache, vertigo.
Bortkiewicz et al. (2012)	Living near mobile phone base stations	Dose response relationships for sleep disturbance, irritability, depression, blurred vision, concentration difficulties, nausea, lack of appetite.
Chu et al. (2011), also Chia et al. (2000), Oftedal et al. (2000)	Mobile phone use	Headache during prolonged mobile phone use or within an hour following such use, with pain occurring on the ipsilateral side of the head; similar observations obtained in each of the 3 studies in column 1; see also Frey (1998).
Conrad (2013)	Smart meter EMF exposure	14 common new symptoms (both severe and moderate) among those exposed and symptomatic, 13 apparent neuropsychiatric: Insomnia, tinnitus, pressure in the head, concentration difficulty, headaches, memory problems, agitation, dizziness, fatigue, skin tingling/burning, involuntary muscle contractions, eye/vision problems, numbness; These ranged in prevalence from 63% to 19% of those experiencing symptoms, such that most symptomatic people experienced multiple symptoms.
Dasdag et al. (1992)	People working in MW broadcasting or at a television transmitter station	These groups suffered from headache, fatigue, irritability, stress, sleepiness, loss of appetite, loss of hearing.
Dwyer and Leeper (1978)	People working in radiofrequency EMFs	Headache, eyestrain, dizziness, disturbed sleep, daytime sleepiness, moodiness, mental depression, memory impairment, muscle and/or cardiac pain, breathing difficulties, increased perspiration, difficulty with sex life.
Eger and Jahn (2010)	Living near mobile phone base station	Neuropsychiatric symptoms, with most showing dose–response relationships: depression; headache; cerebral symptoms; dizziness; disorders of optical and acoustic sensory systems; sleep disturbance; skin changes; with the exception of dizziness, all of these had $p < 0.001$.
Johnson Liakouris (1998)	Study of personnel in U.S. embassy in Moscow exposed to microwave EMFs	Statistically significant increases in neurological (peripheral nerves and ganglia), dermographism (skin responses), irritability, depression, loss of appetite, concentration difficulties, peripheral ganglia and nerve dysfunction.
Khan (2008)	Excessive mobile phone use	Complaints of headache, fatigue, impaired concentration, memory disturbance, sleeplessness, hearing problems.
Kolodynskii and Kolodinska (1996)	Children living near a Radio Location Station, Latvia	Memory dysfunction, attention dysfunction, lowered motor function, slowed reaction time, lowered neuromuscular endurance.
Lamech (2014)	Exposure to wireless smart meter radiation in Victoria, Australia	The most frequent symptoms to develop after smart meter radiation exposure were insomnia, headache, tinnitus, fatigue, cognitive disturbances, dysesthesias (abnormal sensation), dizziness.
Navarro et al. (2003)	Living near cell phone base station	Statistically significant dose response relationships for fatigue, irritability, headache, nausea, loss of appetite, sleep disorder, depressive tendency, feeling of discomfort, difficulty of concentration, loss of memory, visual disorder & dizziness.
Oberfeld et al. (2004)	Living near cell phone base station	Statistically significant dose–response relationships for headache, fatigue, irritability, loss of appetite, visual disorder, nausea, sleeping disorders, dizziness, poor concentration, memory loss.
Oto et al. (1994)	Occupational exposure of 25 workers to either UHF television broadcasting (10) or to 1062 kHz medium wave broadcasting (15)	10 neuropsychiatric changes were assessed, all showing statistically significant changes compared with controls: Somatization*, obsessive compulsivity*, interpersonal sensitivity, depression, anxiety*, hostility*, phobic anxiety*, paranoid ideation, psychoticism*, sleeping disturbance. *$p < 0.001$.
Sadcikova (1974)	Occupational exposure to microwave radiation, including at $<.07$ mW/cm^2	Heaviness in head*, fatigue*, irritability*, sleepiness, memory loss*, cardiac pain*, dermographism (skin sensitivity)*, hyperhidrosis* * significant increase with time of exposure.
Salama and Abou El Naga (2004)	High cell (mobile) phone use	Most common effects were headache, ear ache, sense of fatigue, sleep disturbance, concentration difficulty, face burning sensation. The first three of these had very high statistical significance for correlation with extent of cell phone use.
Santini et al. (2003)	Living near cell phone base stations	Each of the following neuropsychiatric symptoms showed statistical significant dose–response relationships: nausea, loss of appetite, visual disturbance, irritability, depressive tendencies, lowered libido, headache, sleep disturbance, feeling of discomfort, fatigue.
Schüz et al. (2009)	Mobile phone use	Found a small, statistically significant increase in migraine and vertigo. Also found an apparent lowered occurrence of Alzheimer's, other dementia, Parkinson's and epilepsy – these latter were interpreted as being due to perhaps early symptoms of the developing diseases lowering probability of acquiring a mobile phone.
Söderqvist et al. (2008)	Use of mobile phone among adolescents	Increased mobile phone use was associated with increases in tiredness, stress, headache, anxiety, concentration difficulties and sleep disturbances.
Thomée et al. (2011)	High mobile phone use	High mobile phone use was associated with statistically significant rises in stress and sleep disturbance, with somewhat weaker association with depression.
Waldmann-Selsam et al. (2009)	Digital TV signaling	Constant headaches, pressure in head, drowsiness, sleep problems, tightness in chest, shortness of breadth, depressive mood, total apathy, loss of empathy, burning skin, inner burning, leg weakness, pain in limbs, stabbing pain in various organs, weight increase.

stations, listed in Table 3 and also with the two studies of people who become exposed to radiation from smart meters. The studies listed in Table 3 under Chu et al. (2011) (see also Chia et al., 2000; Oftedal et al., 2000) are of a special type. Here people making very long (over 1 h) cell/mobile phone calls develop headaches an hour or more following the initiation of the long call. So these occur within a specific time range following initiation of these long calls, such that headache would only occur very infrequently in that time frame by chance. So here again, there is a strong association. While there is no question that many of these studies show high strength of association, it is also clear that it is becoming progressively more difficult to do these studies. As exposures become almost universal in countries around the world, it is getting difficult if not impossible to find good negative controls. There may be a similar problem in doing animal studies, such that it may be necessary to raise animals in Faraday cages in order to avoid exposures that would otherwise occur as a consequence of our near ubiquitous EMFs.

Biological credibility is extremely strong here, with three aspects of the biology predicting that these low intensity fields cause widespread neuropsychiatric effects. This was discussed above and is reconsidered in the following section.

Consistency within the different epidemiological studies and with other types of studies. The epidemiological studies listed in Table 3 and also those showing neuropsychiatric effects that were cited in Raines (1981) have been performed in many different countries with different cultures. They have been performed in multiple countries in Western Europe, Eastern Europe, the Middle East and in East Asia, as well as in the U.S. and Australia. They are, therefore, not limited to one or two cultural contexts. This is deemed, therefore, an important indicator of causality. We also have a surprising consistency of apparent neuropsychiatric effects of different fields, including various occupational exposures and exposures to cell/mobile phone base stations, exposure to the phones themselves, exposure to smart meter pulses, and other EMFs (see Table 3). Pulsation patterns, frequencies and exact intensities may produce various biological responses (Pall, 2015; Pangopoulos et al., 2013; Belyaev, 2015) so it is a bit surprising that we have as much consistency as we do have across different types of exposures. We also have consistency with the biology discussed in the previous section. Because elevated VGCC activity produced by genetic polymorphism (Table 1) produces diverse neuropsychiatric effects, it is not surprising that elevation of VGCC activity produced by microwave EMF exposure apparently also produces diverse neuropsychiatric effects. Similarly because non-thermal EMF exposures produce widespread changes in brain structure and function in animals (Tolgskaya and Gordon, 1973), it is not surprising that the neuropsychiatric symptoms, which are produced as a consequence of brain dysfunction are produced by such EMFs.

Time sequence: It is clear that the all of these effects follow exposure in the various studies that have been published. In some studies, it is also clear that longer occupational exposure times produce increased symptom prevalence. These include Dwyer and Leeper (1978) and Baranski and Edelwejn (1975). These observations all support a causal relationship between exposure to EMF and the development of neuropsychiatric symptoms.

Dose–response relationship: It is assumed, here, that biological effects have a positive correlation with the intensity of the apparent causal stressor. This is not necessarily true of EMF effects, because it has been shown that there are "window effects" where specific intensities have larger biological effects, than *do either lower or higher intensities* (Pall, 2015; Pangopoulos et al., 2013; Belyaev, 2015). Nevertheless, where different intensities were studied in these epidemiological studies, they do show the dose–response relationship assumed here including Altpeter et al. (2000), Dwyer and Leeper (1978), Eger and Jahn (2010), Lerner (1980), Navarro et al. (2003), Oberfeld et al. (2004), Salama and Abou El Naga (2004), Santini et al. (2003) and Thomée et al. (2011). Thus these data do fit well to the assumed dose–response relationship, found in most causal roles. The Altpeter et al. (2000) study showed a special type of evidence for causality: during a 3-day period when the broadcasting tower was turned off, the melatonin levels recovered to near-normal levels. The studies of headache occurrence on prolonged cell/mobile phone calls (typically well over one hour) listed under Chu et al. (2011) in Table 3 also suggest the assumed dose–response relationship (see also Chia et al., 2000; Oftedal et al., 2000 and earlier citations listed in Frey, 1998). Because such headaches only occur with prolonged cell/mobile phone calls, these studies also provide evidence for a dose–response relationship because low doses are ineffective. Furthermore these same studies provide evidence for such a dose–response relationship from another type of observation. Because the headaches occur predominantly on the ipsilateral side of the head which receives much higher EMF exposure intensity, rather than on the contralateral side of the head, which receives much lower intensities, this provides an additional type of evidence for the predicted dose–response relationship.

While the evidence is convincing that the various neuropsychiatric apparent consequences of microwave EMF exposure are in fact caused by such exposures, there may be somewhat more controversy about another EMF-neuropsychiatric linkage. Havas et al. (2010) have reported a similar list of neuropsychiatric symptoms in electromagnetic hypersensitivity (EHS) patients. They found that each of the following symptoms were common in EHS: poor short term memory; difficulty of concentration; eye problems; sleep disorder; feeling unwell; headache; dizziness; tinnitus; chronic fatigue; tremors; body pain; difficulty speaking; tingling sensation in feet or hands; difficulty writing; difficulty walking; migraine. The similarity of these symptoms to the most commonly found symptoms following non-thermal microwave EMF exposures (Table 3), suggests that EHS is a genuine sensitivity to EMFs. In the bottom row in Table 2, sensitivities were found in rodent studies following non-thermal exposure that suggest a possible animal model for the study of EHS. Each of these EHS-related issues needs to be followed up experimentally.

8. Discussion and conclusions

In the previous section, each of the five criteria for assessing whether an epidemiological association is causal, were considered. Those five are (Hennekens and Buring, 1989): (1) strength of association; (2) biological credibility; (3) consistency; (4) time sequence; (5) dose–response relationship. Each of these five provide strong support for causality such that the combination of all five provides compelling evidence for causality. Low-intensity microwave frequency EMFs do cause diverse neuropsychiatric symptoms. While each of these five is important here, the one that is most important is the criterion of biological credibility.

Three related sets of biological observations each predict that low-intensity microwave EMFs produce widespread neuropsychiatric effects:

1. Such EMFs act via activation of VGCCs, acting through the VGCC voltage sensor which is predicted to be exquisitely sensitive to these EMFs (Pall, 2015). VGCCs occur in high densities throughout the nervous system and have essential roles throughout the nervous system in releasing neurotransmitters and neuroendocrine hormones. These properties predict, therefore, that these low intensity non-thermal microwave EMFs cause widespread changes in the nervous system, causing, in turn, diverse neuropsychiatric effects.

2. Elevated VGCC activity, produced by an allele of the CACNA1C gene which encodes the channel of the main L-type VGCC in the brain, produces various neuropsychiatric effects (Table 1). This predicts, that low intensity non-thermal microwave frequency EMFs which also produce elevated L-type and other VGCC activity, therefore produce widespread neuropsychiatric effects.
3. Studies reviewed in the Tolgskaya and Gordon, 1973 publication (Table 2) have shown that the cells of the mammalian nervous system show high sensitivity to various non-thermal microwave and lower frequency EMFs, being apparently more sensitive than any other organ in the body of rodents. These studies predict that the human nervous system is likely to be similarly sensitive to these EMFs, predicting, therefore, widespread neuropsychiatric effects in humans.

We not only have biological credibility but also more importantly, each of these distinct but interrelated biological considerations predicts that low-intensity, non-thermal microwave EMFs produce widespread neuropsychiatric effects. That common prediction is verified by extensive data summarized in citations provided by the Naval Medical Research Institute Research Report (June 1971), data provided by The Raines (1981) NASA report, and by 26 epidemiological studies summarized in Table 3.

The most commonly reported neuropsychiatric symptoms from these studies are summarized in Table 4.

A total of 22 different studies described in Table 3 were used for data for this table, but not 4 others that only assessed a single neuropsychiatric end point. The Altpeter study which only assessed sleep disturbance/melatonin depletion and the three studies listed under Chu et al. which only assessed headache occurrence following long cell phone calls, listed in Table 3 were not included. Because many of the studies only assessed from 3 to 7 specific symptoms, it is not surprising that the numbers of studies reporting a specific symptom fall far below 22. Where several symptom descriptions were included under one heading, such as dysesthesia, if a study had more than one of these symptom descriptions, it was only counted once.

All the symptoms listed in Table 4 should be considered established parts of microwave syndrome (Hocking, 2001; Johnson Liakouris, 1998). Even if the statistical significance in each study was of the lowest statistical significance ($p < .05$) one would expect only 1 positive study to occur at random out of the 22 studies included here. Because many individual symptoms were not surveyed in many individual studies, the expectation is substantially lower than that. Each of these, having shown positive results in 5 or more studies are highly unlikely, therefore, to have occurred by chance. Stong statistical significance is also seen for individual neuropsychiatric effects reported to have $p < 0.001$ in the Eger and Jahn (2010) and Oto et al. (1994) studies (see Table 3).

Table 4
Commonly reported neuropsychiatric symptoms following microwave EMF exposure.

Symptom(s)	Numbers of studies reporting
Sleep disturbance/insomnia	17
Headache	14
Fatigue/tiredness	11
Depression/depressive symptoms	10
Dysesthesia (vision/hearing/olfactory dysfunction)	10
Concentration/attention/cognitive dysfunction	10
Dizziness/vertigo	9
Memory changes	8
Restlessness/tension/anxiety/stress/agitation/feeling of discomfort	8
Irritability	7
Loss of appetite/body weight	6
Skin tingling/burning/inflammation/dermographism	6
Nausea	5

EEG changes may well be part of microwave syndrome, as well. While none of the studies described in Table 3 measured EEGs, six studies of human occupational exposure cited in the Raines (1981) showed EEG changes (Baranski and Edelwejn, 1975; Bise, 1978; Dumanskij and Shandala, 1974; Lerner, 1980; Sheppard and Eisenbud, 1977). Murbach et al. (2014) cited 10 human studies in support of their statement that "the most consistently reported effects (of mobile phone use) in various studies conducted by different laboratories are changes in the electroencephalogram (EEG) power spectrum." Three recent studies (Lustenberger et al., 2013; Schmid et al., 2012a,b) and several earlier studies cited in Wagner et al. (1998) have each shown EEG changes in sleeping humans exposed to non-thermal pulsed microwave fields. Two recent studies showed EEG changes in persons exposed to Wi-Fi fields (Maganioti et al., 2010; Papageorgiou et al., 2011). Lai (1997) described 8 animal studies showing changes in EEG patterns in animals exposed to non-thermal EMFs and three additional animal studies were described in Tolgskaya and Gordon (1973). With the exception of the 6 studies cited in the second sentence in this paragraph, all of these are direct experimental studies which are not, therefore, susceptible to the questions of causality that can be raised about epidemiological studies. It is the author's view that future studies should consider studying EEG changes as an objectively measurable assessment of brain physiology and that before and after increased exposure studies should be considered when a new EMF source is to be introduced into human populations. While such studies must be done carefully, given the complexity of EEGs, even very small numbers of individuals may produce highly statistically significant results in well designed studies analyzed with paired *t*-tests.

One of the citations from the previous paragraph, Bise (1978) reviewed earlier studies of low level microwave frequency exposures in humans and concluded that such EMFs produced the following neuropsychiatric effects: headache, fatigue, irritability, dizziness, loss of appetite, sleepiness, sweating, difficulty of concentration, memory loss, depression, emotional instability, dermographism, tremor, hallucinations and insomnia. The strong similarity of this list from 37 years ago and the list in Table 4 should be noted. The Bise (1978) list is based on occupational exposure studies whereas the current list in Table 4 is based primarily on EMF exposures from cell/mobile phone base stations, from heavy cell phone usage and from smart meters, *three types of exposures that did not exist in 1978*. The strong similarity between the Bise (1978) list and the current one 37 years later alone produces a compelling argument that the 11 neuropsychiatric effects found on both lists are caused by exposure to multiple types of low-intensity microwave EMFs.

The pattern of evidence is compelling in support of the earlier statement of Levitt and Lai (2010) that "the primary questions now involve specific exposure parameters, not the reality of complaints or attempts to attribute such complaints to psychosomatic causes, malingering or beliefs in paranormal phenomena."

We can barely imagine how the combinations of neuropsychiatric effects, including those in Table 4, will influence human behavior and social interactions, now that the majority of the human populations on earth are exposed to ever increasing intensities and diversity of microwave frequency EMFs. You may recall that three of the occupational exposure studies cited in (Raines, 1981 showed increasing prevalence of neuropsychiatric symptoms with years of exposure to consistent patterns of EMF exposure intensities (Dwyer and Leeper, 1978; Sadcikova, 1974;

Baranski and Edelwejn, 1975). With ever increasing exposures in human populations, we have no idea what the consequences of these ever increasing exposures will be.

Conflict of interest

The author declares no conflict of interest.

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July 16, 2019

Re: 850-28 Proposed Project

I am a resident of Olivebridge. I swim in Lake Onteora every day. The lake and surrounding forest are a precious, unique resource, which must be preserved. Hundreds of people use it every day.

I am appalled that the Town of Kirkpatrick planning board has given a Negative Declaration on environmental impact review of the proposed 850-28 concrete-steel project. I am also appalled that the DEC, which is mandated to protect our common environment, has remained silent and not intervened to force a serious environmental review of the application for this project.

This project would have a terrible, profound impact on my life and the life of thousands of Ulster County residents. I urge Ulster County legislators to use their influence to pressure DEC and the Town of Kirkpatrick to conduct a serious environmental review of this project.

Thank you. Zachary Sklar

☆ DID NOT SPEAK OR SIGN UP