



# Austin Energy Green Building

A Primer for a Discussion of Toxic Materials

For the June Resource Management Commission

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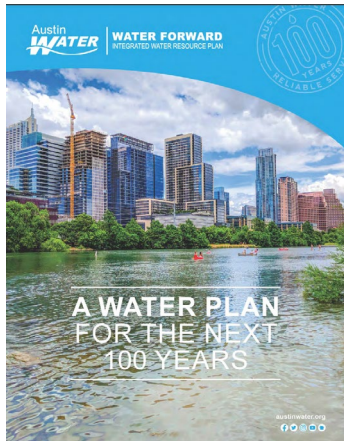
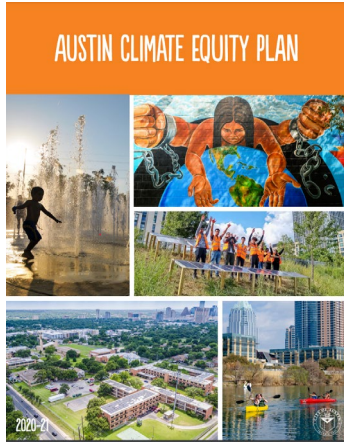
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# Program Drivers

Include...

- Austin Energy's Generation Resource Plan
- City of Austin's Climate Equity Plan
- Project Connect
- Austin Water's Water Forward Integrated Water Resource Plan
- Austin Resource Recovery- Zero Waste Master Plan



# Other Drivers of Green Building Priorities

- AEGB Mission- *To cultivate innovation in building and transportation for the enrichment of the community's environmental, economic and human well-being*
- Health- obesity, cardiovascular disease, diabetes, mental health
- Climate- Carbon as well as hot humid climate and air quality
- Equity, cost, up-front affordability
- Building codes
- Trends- building industry, regulatory, social, other...

# Purpose/Goals of Ratings

- To advance the communities' understanding and application of sustainability practices in construction
- To build capacity (around sustainability) within the market
- To position new principles and concepts to be adopted as standard practices
- To position critical new principles and concepts to be adopted as code
- To be balanced in how they promote sustainability

# Austin Energy Ratings

Austin Energy Green Building (AEGB) rates new construction and major renovation projects for three markets



## Single Family

Production & Custom Homes



## Multifamily

Residential < 7 Stories







## Commercial

& Residential ≥ 7 stories

# Ratings- Residential Example

Ratings comprised of basic requirements, additional requirements by rating level and points





1 Star	Basic Requirements	
2 Star	25 - 49 Points plus all	 requirements
3 Star	50 - 74 Points plus all	 requirements
4 Star	75 - 99 Points plus all	 requirements
5 Star	100 - Higher Points plus all	 requirements



# Areas in Ratings (Residential) Addressing Toxic Materials

- Mechanical ventilation systems
- Indoor Environmental Quality
  - Exhaust fans/vents
  - Low VOC paints
- Homeowner's manual
- Pest control
- PVCs and Phthalates
- Improved air quality
- Innovations

# Toxic Materials Points (Residential)

Category	Requirement	Pts.	How is it Relevant
Education	Green Building Education	1 to 12	
	Documented Design Team Meeting	2	
	Expanded Homeowner Education	5	list of finishes, list common hazardous materials on remodels, pest control
	Case Study	1	
Site	Density	3 to 7	
	Community	1 to 10	
	Rain Gutters	3	
	Site Work and Landscape	2 to 8	
	Wildfire Resilience	2	
	Outdoor Living	1 to 15	
	Exterior Lighting	1 to 4	
	Floor Resilience	2	
Energy			1 Star Basic Requirements
	Energy Performance	5 to 36	2 Star 25 - 49 Points plus all  requirements
	High Performance Systems	1 to 14	3 Star 50 - 74 Points plus all  requirements
	Water Heater Efficiency	0 to 5	4 Star 75 - 99 Points plus all  requirements
	Controls and Monitoring	0 to 5	5 Star 100 - Higher Points plus all  requirements
	Residential Commissioning and Additional Testing	1 to 9	
	High Efficiency Fixtures and Appliances	1 to 6	
	Photovoltaic Systems	1 to 15	
	Green Energy	1	
	Electric Vehicle Charging	1 to 2	
	Electric Readiness	2	
	Roof and Shade Design	0 to 9	



# Toxic Materials Points (Residential)

Category	Requirement	Pts.	How is it Relevant
Water	Water Heating and Design	1 to 7	1 Star Basic Requirements
	Indoor Water Conservation	1 to 7	2 Star 25 - 49 Points plus all requirements
	Outdoor Water Conservation	2 to 3	3 Star 50 - 74 Points plus all requirements
	Rainwater Harvesting	1 to 10	4 Star 75 - 99 Points plus all requirements
	Water-Efficient Home	3	5 Star 100 - Higher Points plus all requirements
Materials and Resources	Exemplary Construction Waste Management	3	
	Durable Finished Floor	2 to 4	no vinyl flooring or vinyl composite tile
	Recycling and Reuse of Existing Building Materials	3 to 5	
	Durable, Locally Sourced, and Recycled Materials	2 to 10	
	House Size	2 to 4	
	Advanced Framing	1 to 10	
	Pest Control	2 to 5	borate treatment and mechanical barrier termite control
	PVCs and Phthalates	1 to 5	wiring materials PVC free, supply plumbing PVC free, windows and doors PVC free
Health	Mechanical Ventilation	0 to 5	ERV (enthalpy recovery ventilator) no tie into kitchen or bathroom ventilation, filtered ventilation
	Dedicated Dehumidification	1 to 4	
	Strategic Register Placement	1	
	Natural Ventilation and Lighting	1 to 8	
	Improved Air Quality	1 to 12	no fireplace in conditioned space, detached or vented garage, HVAC filtration, formaldehyde free cabinets and shelving, safe sealants for hard surfaces, alternate certifications
Innovation	Universal Design	1 to 12	

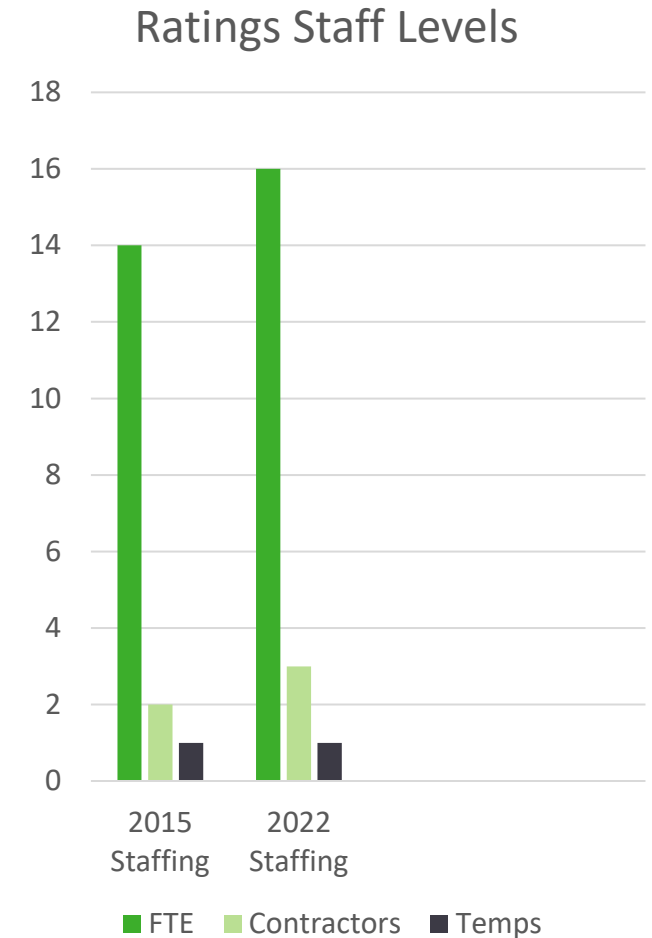
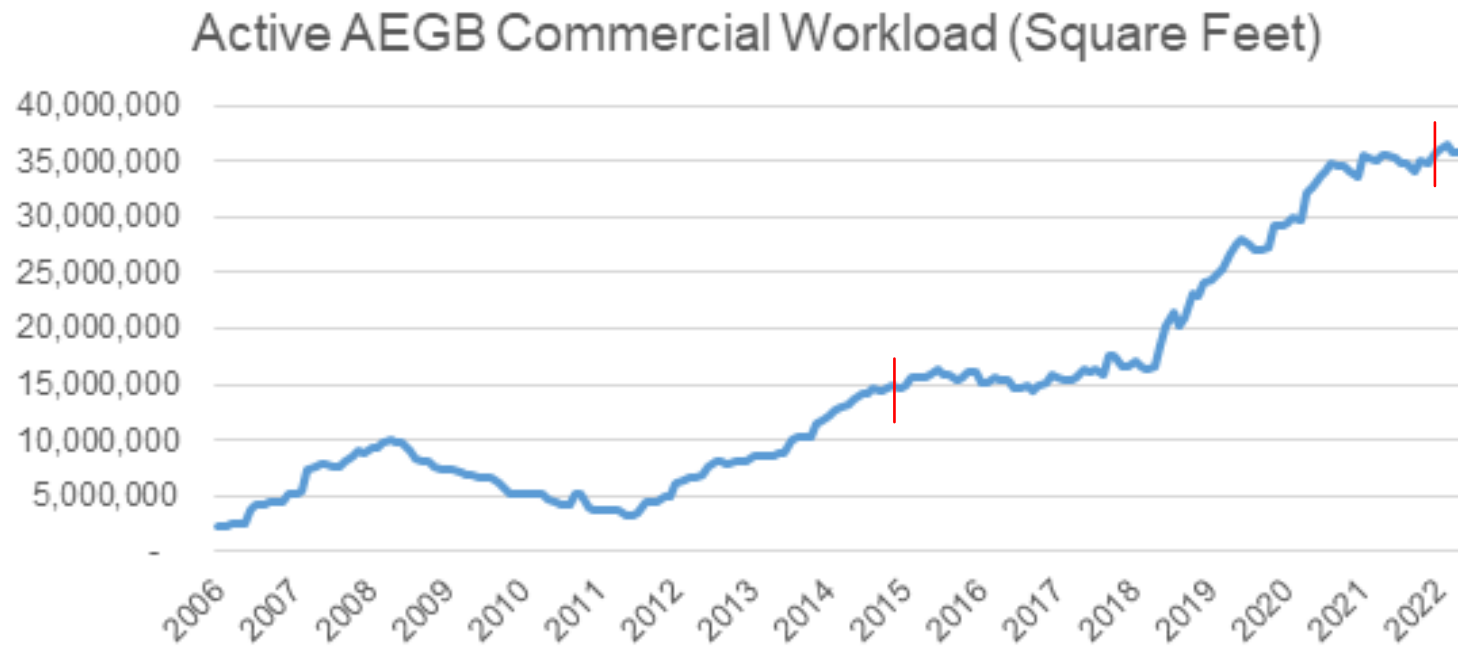
Also accept LEED/WELL points not expressly spelled out in AEGB ratings

# Trends in Ratings Administration

- Transition from “art” to science, highly technical
- Addressing what is timely
- Verification of effectiveness of measures
- Get away from being overly prescriptive
- Use pre-existing certifications
- Streamline administration- minimize work required of both customer and staff to verify/support data and claims



# Current Austin Energy Resources & Workload



# Impacts of Growth

- Have worked aggressively to minimize administrative burden of ratings
- Suspended Integrated Modeling Incentive program
- Have cut educational seminars down from 12/year to 6/year
- Have suspended annual networking event, dropped level of support for Cool House Tour
- Delayed progress on new projects to minimize embodied carbon, refrigerant capture and advanced grid integrated buildings

# Staff Experience

- 292 years of related experience
- 6 Texas Professional Engineers (Civil, Mechanical, Chemical, Architectural)
- 3 registered architects
- 5 WELL AP (Accredited Professional) certifications
- 13 LEED BD&C (Building Design and Construction) certifications
- 1 member of the International Code Council Consensus Committee

# Innovative Work Underway

- Embodied Carbon- Dr. Wil Srubar's Living Materials Lab at Colorado University- reducing embodied carbon in concrete, steel, other...
- Grid Optimal- pilot with the New Buildings Institute to develop new metrics for building construction to support more effective grid operations
- Equity- work with the NAACP, USGBC/LEED, local organizations
- Toxic Materials calculator- budget request for '23



# Scheduling Considerations

- **International Building Codes- every 3 years, 2024 is next**
  - City adopts new codes when there are substantial changes worth adopting
  - City has policy not to go more than 2 cycles (6 years) without adopting new code
  - We expect to know the bulk of recommended changes to the '24 Codes within the next couple of months
- **Ratings updates- coincide with new code cycles every 3 years**
  - Try to minimize mid-cycle changes
  - Currently updating the Commercial Rating (including how we address toxic materials)
  - Look to initiate Residential Rating update process this Fall and have it become effective next calendar year (2023)



# RMC Toxic Materials Working Group

Louis Stone- RMC Commissioner

Rebecca Brenneman- RMC Commissioner

Paul Robbins- RMC Commissioner

Gail Vittori- Center for Maximum Potential Building Systems

Gayle Borst- Architect

Ray Tonjes- Green Home Builder

Megan Matthews- Director of Design- Foundation Communities

Trey Farmer- Architect

# RMC Working Group- Proposed Schedule

- Overview of Green Building Ratings- conducted 5/24
  - Reviewed this presentation
  - Talked about workgroup composition
- Level setting on fundamentals of toxic building materials- 1 meeting
- Ecosystem overview- at least 2 meetings
- Define what leadership looks like- 1 meeting
- Understand impacts/drivers for key stakeholder segments- 1 meeting
- Develop recommendations- 1 meeting

Thank You  
Questions?

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