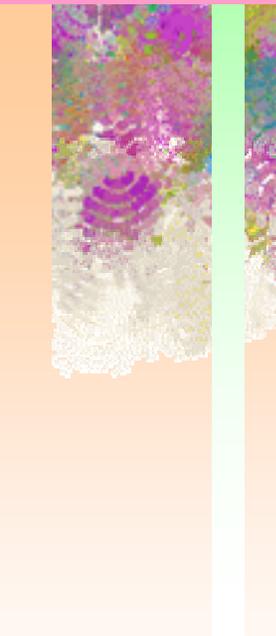


Adopting a New Energy in New Mexico



**by: Harold Trujillo, PE, Bureau Chief
New Mexico Energy, Minerals & Natural Resources
Department
National Workshop on State Building Energy Codes
Philadelphia, Pa. July 19 – 22, 2004**





New Mexico Code Adoption Process

- The NM Construction Industries Commission has the authority to adopt all new building codes – Appointed by the Governor.
- The NM Construction Industries Division implements codes, licenses contractors and does building inspections. It contains the General Construction Bureau, Plumbing & Mechanical Bureau and the Electrical Bureau.
- The Commission directs the Division to review new codes and make amendment recommendations by getting input from technical advisory groups (TAG) . A general advisory group (GAG) collects input and forward recommendations to the Commission



Code Adoption Environment

- **Organized Labor vs. Builder Concerns**
- **Desire for Less Government Regulation**
- **Electrical Trades holding on to a 2 watt per gross square-foot allowance for lighting in all commercial buildings**
- **Flexibility for Passive Solar, Adobe, Straw bale Rammed Earth and log homes**

New Mexico History - Codes

- **1986 – October 2002**
 - 1986 Model Energy Code For Commercial Buildings
- **1992-October 2002**
 - **1992 Model Energy Code For Residential Buildings Including:**
 - NM Component Approach and Trade-off Procedure
 - NM Passive Solar System Compliance Approach
- **October 2002**
 - **IECC 2000 Energy Code Adopted**
- **November 2002**
 - **Lawsuit threatened by organized labor – plumbing and mechanical**
- **December 2002**
 - **IECC 2000 Energy Code **Rescinded****

Disappointment: Approximately 250 people in 13 TAG's worked for a year to get consensus on a final code.



Building Code Battle Waged in the Legislature in 2003

- **Organized Labor VS. Builders & Developers**
 - Task: Change law to require ANSI process codes
- **Justification:**
 - ANSI Process was Developed by Industry
 - Uniform Code More Developed
 - Uniform Codes good to Build Better Buildings
 - International codes developed by government agencies and building officials



Counter Attack- From The Homebuilders Front

- **Lower construction costs from “I” codes**
- **“I” Codes Good for Economic Development**
- **Contractors and Design professionals familiar with “I” codes**
- **Code official certified and trained to implement “I” codes.**
- **Two small cities in NM had implemented all international building codes.**



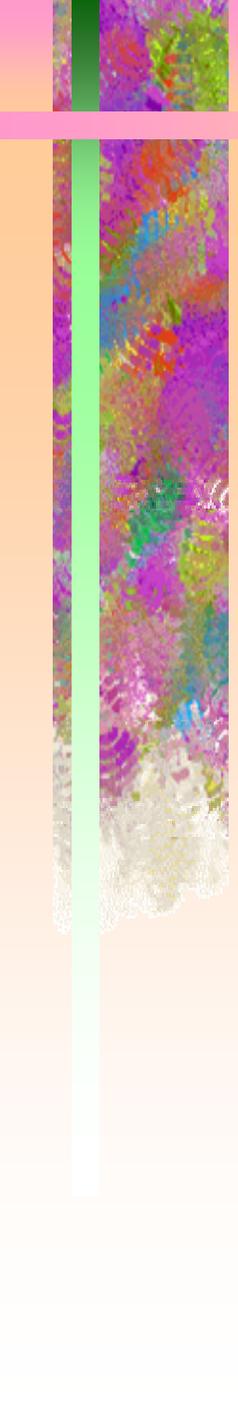
Results of Legislative Battle – All Codes Allowed – *A draw*

- **Commission Recommends review of the 2003 editions of International Codes and the Uniform Plumbing and Mechanical Codes in May 2003 for preliminary adoption by December 2003.**
- **Back to Committees – 13 TAG's and about 250 contractors, design professionals and inspectors provide input.**



Back to Code Adoption Environment. Biggest Problem – Electrical Code Advisory Group.

- **Electrical TAG wished to keep the 2 watt/s.f. allowance for lighting in all commercial buildings – *Immediately a conflict was created with the IECC 2003.***
- **The Energy Code Advisory Group recommended adoption of the IECC 2003 in whole to the General Advisory Group**
- **Motion to adopt the IECC in whole was *tabled twice* by the General Advisory Group and was *sent back* to the Electrical TAG for reconsideration.**



Why was Lighting Budget Important to New Mexico

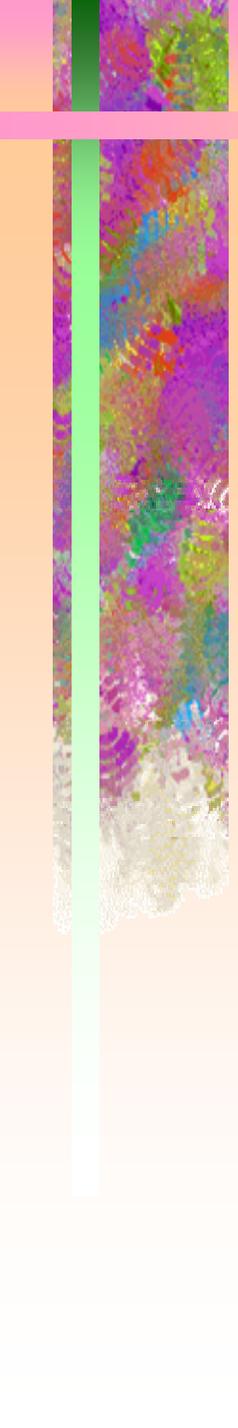
- Pacific Northwest National Laboratory completed a study in January 2003 which concluded that most of the benefits from adopting the IECC 2000 in New Mexico came from new lighting requirements as following:
 - New Offices – 74% of code savings
 - New Retail businesses - 91% of code savings
 - Public Schools – 100% of code savings



The Watts/S.F. Lighting Budget Conflict

- **IECC 2003 Code Allowances**
 - Offices 1 w/s.f.
 - Retail 1.5 w/s.f.
 - Schools 1.0 w/s.f.

- **New Mexico Electrical Code Allowance**
 - Offices 2 w/s.f.
 - Retail 2 w/s.f.
 - Schools 2 w/s.f.



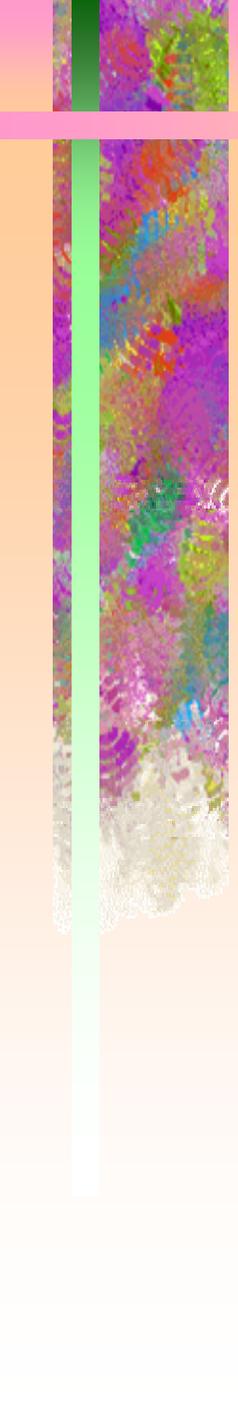
NM Public School – Big Opportunity for Savings

Public schools in New Mexico add and renovate 2.5 million square feet of buildings every year. Public Schools would realize a reduction in construction costs of approximately \$124,000 per year and energy cost savings of \$289,000 per year.



Technical Concerns of Electrical TAG

- **TAG wanted to keep 2 watt per gross square foot allowance – Why:**
 - **Keep building costs lower**
 - **keep designs simple for small contractors who did not want to hire experts to design lighting systems**
 - **Keep energy code provisions under their control and the Electrical Code was all they needed to do their work.**



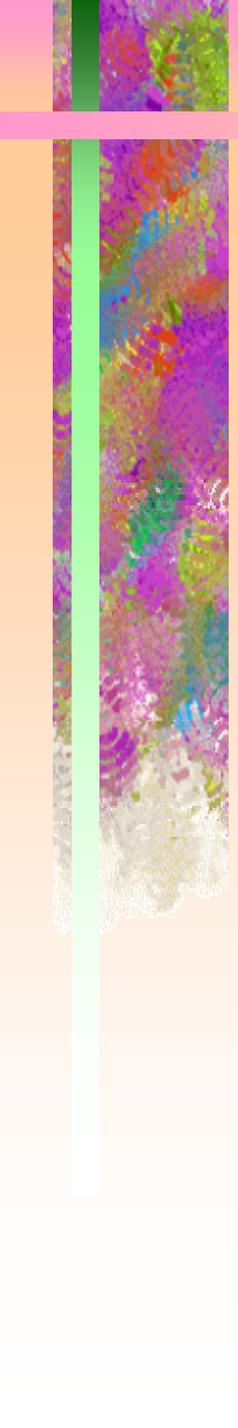
Technical Experts Targeted Electrical TAG Technical Experts

- **PNNL Study was specific to NM and identified benefits – *Info hard to question***
- **Southwest Energy Efficiency Project (SWEET) Report Identified NM specific benefits**
- **Presentations made to Electrical TAG by:**
 - **SWEET, Sandia National Lab. lighting Design Expert, Contractor and Local Lighting Design Firm**
 - **Energy Manager from Largest School District**



General Interest Group Also targeted Electrical TAG

- **Testimony was provided at all public hearings from:**
 - **Coalition for Clean Affordable Energy**
 - **Public Research Interest Group (PERG)**
 - **Earthen Builders Association – Solar Group**
 - **A few citizens concerned about energy**



Support achieved from Code Officials and key Interest groups and why their support was important

- **Head of the General Construction Code Officials in the Division**
 - **Why: Duty to select select general advisory members and responsible by law for making the recommendation to the commission on which building codes to adopt. NM Energy Office was member of GAG.**
- **Other Important Groups**
 - **NM Homebuilders Association – Wanted “I” Codes**
 - **Passive Solar Home Builders – Wanted Flexibility**
 - **Supportive building officials from local entities – Very old codes in effect and Concerns for energy costs**

Most Valuable Input to Electrical TAG and the GAG After Public Hearings - Why

- **Energy Manager for the Largest School District – Why:**
 - Concerned for school energy costs
 - Provides half the design work to businesses
 - Provides half the construction dollars
 - Most of the Electrical TAG had done work for this energy manager
 - Only testimony and written comments seriously considered by the TAG and the GAG.

Role of the NM Energy Office

- **Provided Summarized information reports to all committees**
- **Contacted and prepared key individuals to present information at the TAG and GAG meetings**
- **Maintained contact with Building Code Assistance Project (BCAP) – They helped get quick responses to technical challenges and provided valuable contacts and support info.**
- **Kept neutral on adoption of a specific code**
 - **Explanation: It would have been acceptable to adopt the ASHRAE 90.1-2001 energy standard which organized labor supported**
 - **Our Governor did not pick sides**



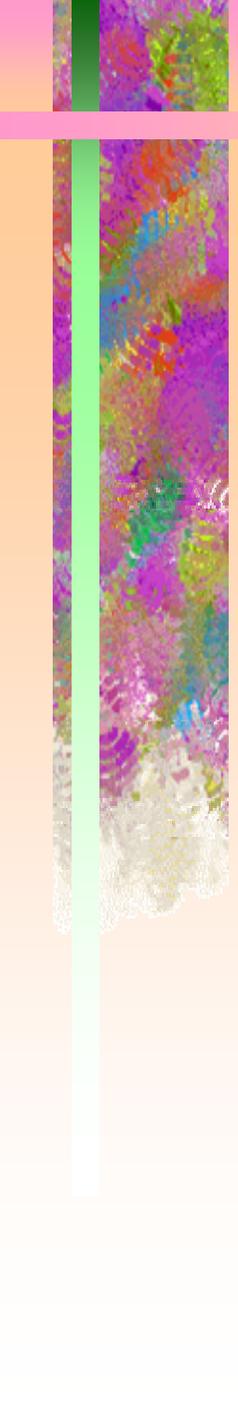
Success

- **New Mexico adopted the 2003 International Energy Conservation Code and placed it into effect July 1, 2004**



Benefits - Typically 8 million square feet of building are being added in New Mexico every year.

- Electricity Savings – 394 Million kWh per year
- Electrical Demand Reductions – 45 megawatts
- Energy Saved - 4,570 Billion Btu's per year
- Electricity Cost savings @ 6 cents per kWh – ***\$23.6 million per year***



The Southwest Energy Efficiency Project (SWEET) has studied the consequences of various levels of commercial building code conformity in New Mexico in a report entitled *Increasing Energy Efficiency in New Buildings in the Southwest: Energy Codes and Best Practices*.*

- Complying with the International Energy Conservation Code (IECC 2003) will ***saving 490,000 megawatt-hours*** in the year 2020.
- If most of the electricity in 2020 is generated by coal-burning power plants (as it is now), in that year there will be over ***300 million gallons of water*** saved.



**For additional Information Contact:
Harold Trujillo, PE - Bureau Chief
New Mexico Energy, Minerals and Natural Resources Dept.
Energy Conservation and Management Division
1220 South St. Francis Drive
Santa Fe, NM 87505
(505) 476-3318 Voice
(505) 476-3322 FAX
hjtrujillo@state.nm.us
<http://www.emnrd.state.nm.us/ecmd>**