Minutes of Commission Meeting

State Capitol, Room 437

Sacramento, California

November 10, 2016

Members Present

Michael Gardner, Chairman
Greg Beroza
Ken Cooley
Mark Ghilarducci
Randall Goodwin
Peggy Hellweg
Mia Marvelli
Ian Parkinson
Timothy Strack
Chet Widom

Members Absent

Tracy Johnson, Vice Chair
Anthony Cannella
Helen Knudson
Kit Miyamoto
David Rabbitt
Fuad Sweiss
Mark Wheetley

Staff Present

Richard McCarthy, Executive Director
Lena Daniel, Administrative Manager
Robert Anderson, Sr. Engineering Geologist
Fred Turner, Structural Engineer
Salina Valencia, Legislative Director

I. CALL TO ORDER AND ROLL CALL

Chairman Michael Gardner called the meeting to order at 10:00 a.m. Administrative Manager

Lena Daniel called the roll and confirmed the presence of a quorum.

II. CHAIRMAN'S REMARKS

Correspondence from the Office of Senator Dianne Feinstein

Chairman Gardner stated that he responded on behalf of the Commission to Senator Feinstein's letter that was sent on September 22, 2016t. He noted that in his response he expressed that the Seismic Safety Commission is solely an advisory body that typically does not get involved in pursuing legislation. Given the state's financial condition, he expressed doubt as to whether the governor would be willing to sign a bill appropriating money to local governments for retrofitting buildings. He added that Commission representatives will meet with Senator Feinstein's staff to brief them on the Commission's role and activities.

III. SEPTEMBER 2016 COMMISSION MEETING MINUTES

Chairman Gardner informed the Commission that there was a problem with the audio recording of the September meeting, so the minutes of that meeting were incomplete. He welcomed assistance from Commissioners in helping the staff flesh out the draft minutes.

Legislative and Communications Director Salina Valencia asked commissioners to email proposed additions and revisions to her by November 18.

Chairman Gardner advised that the September minutes would be ready for Commission approval at the January meeting.

IV. GLOBAL EARTHQUAKE MODEL (GEM) FOUNDATION: INTRODUCTION AND FOUNDATION OVERVIEW

Executive Director Richard McCarthy noted that the Commission has provided funding for two specific Global Earthquake Model (GEM) products, and GEM representatives have made several presentations to the Commission in the past about the status of those efforts.

Mr. McCarthy introduced and welcomed GEM's Dr. John Schneider, Secretary General, Global Earthquake Model (GEM) Foundation, and invited him to address the Commission.

Dr. Schneider gave a brief summary of his background and experience.

Dr. Schneider noted that GEM is building an information base about earthquakes and products to help developing countries and the private sector manage earthquake risks. He explained that GEM is a worldwide public and private partnership that works with a wide variety of organizations, including the insurance sector, engineering companies, and government groups. He displayed a list of GEM's partners, consisting of nearly 100 countries, local and regional organizations, institutions, and private collaborators.

Dr. Schneider stated that GEM was established in 2009 and is nearing completion of its second

five-year program. He said the first five years was focused on developing fundamental background information and tools, and the second five years focuses on creating products and refining global earthquake risk assessment.

Dr. Schneider reviewed GEM's four guiding principles: 1) working with local and regional experts in science, engineering, and social science disciplines; 2) developing credible and useful products based on solid research; 3) sharing and ensuring open access to all information; and 4) focusing on the public good. He discussed GEM's scientific framework, based on standard hazard exposure and vulnerability factors that create risk, combined with physical, economic, and social factors that contribute to vulnerability and resilience, to create an integrated view of risk and risk reduction. Dr. Schneider stated that GEM has created a platform called OpenQuake that provides software tools, products, databases, and information on global projects.

Dr. Schneider stated that GEM builds capacity by offering workshops, training and analysis tools, and information that will lead to better data sets, seismic catalogs, ground motion equations, and vulnerability models. He noted that GEM is working to develop standards to ensure consistent methodology, data formats, and approaches. He said that by 2018, GEM plans to complete development of a global earthquake risk model that will contribute to the world's understanding of earthquake risk.

Dr. Schneider expressed his appreciation to the Commission for its ongoing support.

Chairman Gardner thanked Dr. Schneider for his presentation.

V. BACK TO NORMAL: EARTHQUAKE MODELING RECOVERY PROJECT

Dr. Christopher Burton, Global Earthquake Model (GEM) Foundation, explained that the purpose of this project is to identify factors that help communities recover more quickly from earthquake and also to identify factors that impede progress. He said he studied recovery issues following the 2014 South Napa earthquake and other earthquakes. He displayed slides showing the condition of a damaged house immediately after the earthquake, one year after the earthquake, and two years after the earthquake, and he pointed out that repairs have still not been made due to a lack of funds. Dr. Burton showed photos of other damaged buildings in the same area that have been reconstructed and repaired. He observed that the extent of damage does not determine the speed of recovery; rather, there are other drivers that result in different outcome. He said one purpose of his study was to develop tools to help decision-makers develop sound public policies to help alleviate the differential recovery process.

Dr. Christopher Burton described a prediction tool for GEM's OpenQuake platform that takes into account various factors, including shaking intensity, levels of ground shaking, and types of damage to different types of buildings. He emphasized the importance of externalities, such as social, economic, and political issues that influence the recovery process. He said the prediction tool also allows decision makers to compare the effects of different policy initiatives on recovery outcomes.

Dr. Christopher Burton invited Dr. Henry Burton to discuss the mathematical model for post-earthquake recovery that was built into GEM's integrated risk modeling tool.

Dr. Henry Burton noted that the recovery trajectory of each community allows researchers to measure cumulative impacts over time and determine a community's resilience. He noted that GEM's model also identifies how external factors affect recovery.

Dr. Henry discussed the mathematical underpinning for GEM's post-earthquake recovery model. He said GEM's tool incorporates regression analysis and a theoretical model to arrive at a hybrid approach that uses both empirical and theoretical modeling. He stated that GEM's model starts with a characterization of the hazard, including shaking intensity, and then analyzes the spatial distribution of damage. The next step, he noted, is identification of impediments to recovery, both internal and external factors, and this analysis is based on statistical modeling. Dr. Burton advised that the last step is recovery simulation, taking into account the initial impact and the recovery trajectory.

Dr. Henry Burton described how the recovery model was applied to data from the Napa earthquake. He said damage assessments were conducted for about 1400 buildings, and recovery information was available for 367 buildings. He noted that socioeconomic data was collected from census statistics on the affected communities.

Dr. Christopher Burton said the Napa earthquake provided an opportunity to validate the recovery model using real-world data. He noted besides physical damage, earthquakes result in

social and economic effects, so the study also identified pre- and post-event social conditions that affect recovery, such as decision-making processes and levels of preparedness. He advised that a community's inherent conditions are the best predictors of recovery, and the study showed that poverty plays a bigger role in the recovery process than many other variables.

Dr. Christopher Burton advised that this GEM product is the first of its kind, and this ground-breaking tool will lead to future applications as well as identification of areas of concern. He said GEM has two years of data for Napa, but it would be helpful to continue to monitor the recovery there to validate future predictions. He noted GEM hopes to use the tool globally to monitor recovery from earthquakes and other events such as floods and tropical cyclone impacts, and to extend the analysis to critical infrastructure such as hospitals and schools. Dr. Burton acknowledged the need to address scale, sensitivities and uncertainties based on changes in scale, and the incorporation of qualitative data. He remarked that obtaining reliable qualitative data remains challenging, but this information needs to be combined with quantitative data to accurately predict impacts.

Commissioner Randall Goodwin asked how well GEM's work is integrated with local decision-makers, and how it would affect local policies, general plans, and specific plans. Dr. Christopher Burton responded that this issue had not been addressed. He said the researchers did conduct interviews with local government officials and recovery workers, and they were extremely interested in having this tool. He added that the entire framework is being utilized in British Columbia already, and GEM is pleased with the response.

Commissioner Beroza emphasized the importance of involving potential users early in the development of this kind of product.

Commissioner Peggy Hellweg asked if the researchers used just one subdivision for the predicted data set in their study, and she noted that this results in a substantial over- or under-estimation of recovery time for other parts of a community. Dr. Henry Burton said the study was not limited to one subdivision, and broader set of data was used to improve the overall model, while still maintaining a conservative approach.

Mr. McCarthy noted that Dr. Dale Cox would be speaking later about the Haywired scenario for magnitude 7 earthquake in downtown Oakland. He noted it would be helpful for the Governor's Office to have a recovery prediction after six months so the governor and legislature can consider ways of speeding up the effort by taking specific actions. He asked if the GEM tool could provide regular status updates and identify what could be done to speed up recovery. Dr. Henry Burton stated that as the model gets more explicit, it becomes more complex, and computational efforts become larger. He said the overall framework is available, and a reasonable data set can provide good predictive information about building damage and areas with slower recovery periods.

Mr. McCarthy observed that one difficult challenge is fire following earthquake, and he asked if the model could handle hazards like that. Dr. Henry Burton said the current model focuses solely on the seismic hazard and the damage it causes.

Chairman Gardner thanked Dr. Christopher Burton and Dr. Henry Burton for their report.

VI. BEYOND BUTTON PUSHING: IMPACT OF ASSUMPTIONS ON EARTHQUAKE MODEL RESULTS

Dr. Henry Burton provided an update on GEM's study of the impact of various assumptions on earthquake models. He said the project has another three months before completion, but some preliminary results were available.

Dr. Burton explained that the purpose of the study is to examine the variation in assessments of risk using different earthquake models. He displayed examples of analyses of seismic risks in the Bay Area, and he pointed out their inconsistent results. He noted that the costs of retrofit are tied to the level of seismic risk, so more accurate risk assessments would result in better retrofit decisions. Dr. Burton said one of the major advantage of GEM's product is its transparency and open source access.

Dr. Burton explained that calculation of risk requires data on a community's building stock, occupancy, and building costs, including residential, commercial, and public buildings. He noted that considerable building data is available in the U.S., and the HAZUS risk reduction program provides detailed information on commercial, industrial, residential, health care, and educational facilities. He advised that GEM researchers found several other helpful data sets that pertaining to building types, size, and energy consumption.

Dr. Burton thanked the Commission for its support and assistance. He said GEM has now been able to develop a model that applies to the entire country, and this tool will be useful to help many communities better manage their risks. Dr. Burton expressed confidence that in the future, the model will benefit developing countries with limited resources. He said GEM plans to complete a global earthquake risk model by 2018, and the lessons learned with this project will be helpful.

Chairman Gardner thanked Dr. Burton for his presentation.

VII. EXISTING TALL BUILDINGS CASE STUDY

Dr. Stephen Mahin, Director, National Hazards Engineering Research Institute (NHERI) Simulation Center, provided an update on the Pacific Earthquake Engineering Research (PEER) Center's in-depth study of existing tall buildings. He said the study was jointly funded by PEER and the California Office of Emergency Services (Cal OES). He explained that PEER has examined the seismic risks associated with different kinds of structures, including reinforced concrete buildings, wood cripple-wall buildings, and transportation facilities. Dr. Mahin noted that many tall and complex buildings are being constructed in some of California's large urban centers, but little is known about how they perform in earthquakes, so there is increasing interest in this area.

Dr. Mahin stated that the existing performance-based guidelines for the design of tall buildings

are being revised to incorporate more recent information and current design practices. He noted that although these guidelines may help improve the quality of new buildings, there are still concerns about the level of seismic risk posed by older tall buildings. He observed that two thirds of the buildings in the central business district of Christchurch, New Zealand, were so badly damaged they had to be demolished. Dr. Mahin said one of the major purposes of the study was to look at whether existing tall buildings could be upgraded economically to reduce their hazards.

Dr. Mahin indicated that the study entailed an in-depth case study look at several tall buildings in San Francisco, and buildings in Los Angeles will be included as well. He said the researchers reviewed the drawings for each building, analyzed their seismic hazards, and conducted detailed assessments to determine whether strengthening would be cost-effective. He stated that the end product will be a new set of best practices and guidelines to help building owners decide whether they need to evaluate and retrofit their structures.

Dr. Mahin said the second phase of the retrofit study involved looking at various retrofitting technologies, including shock-absorbing dampers, steel plates, and steel bracing. He displayed slides showing examples of these systems. Dr. Mahin stated that even with these retrofits, more than half of the buildings would collapse in a major earthquake. He advised that retrofitting clearly improves a building's performance, but not that greatly, and depending on the extent of the retrofit, many buildings would still need to be red-tagged after a maximum considered earthquake. Dr. Mahin noted that a look at median repair costs shows that installation of viscous dampers may be a more cost-effective solution than rebuilding, but other kinds of retrofitting

measures are not likely to save a building from replacement.

Dr. Mahin advised that the PEER researchers are now completing some follow-up work on this building and improving retrofit methods, and several other candidate buildings have been identified for future study. He reported that funding for this project has ended, but PEER is working to find new funding sources so the work can be continued. He said PEER also plans to bring in practicing engineers to help develop guidelines.

Dr. Mahin expressed his appreciation to PEER and Cal OES for their support. He said a number of students have been helping with the research, and Commissioner Kit Miyamoto and his associates provided some valuable advice. He thanked them for their help.

Chairman Gardner thanked Dr. Mahin for his report.

VIII. THE HAYWIRED SCENARIO, APRIL 2017: UPDATE

Dr. Dale Cox, U.S. Geological Survey (USGS), gave an update on the Haywired scenario event planned for next April. He describing some of USGS' work in aerial imagery, hazard mapping, and research on earthquakes and biology. He said the goal of Science Application for Risk Reduction (SAFRR) group is to disseminate scientific results to end users.

Dr. Cox noted that USGS focuses on developing scenarios to help minimize loss of life and damage from natural disasters. He cited California's annual ShakeOut earthquake scenarios and

the tsunami scenario of 2013 as examples. He stated that USGS is now developing the Haywired scenario and one based on climate extremes in the Southwest U.S.

Dr. Cox said the Haywired scenario postulates a magnitude 7.0 earthquake centered under Oakland that takes place at 4:18 p.m. on April 18, 2018. He observed that the Hayward fault is the most urbanized earthquake fault in the nation, and perhaps the most dangerous fault, and life in the Bay Area after the earthquake will be seriously disrupted as things go "haywired." Dr. Cox noted there have been no major earthquakes in the U.S. since the development of the World Wide Web, so the Haywired scenario will be the first to test what happens in a wireless and interconnected world.

Dr. Cox explained that the scenario starts fault rupture, which then results in ground motions, liquefaction, landslides, after-slips, and aftershocks. He said the scenario will also include fire following earthquake. He indicated that in addition to emergency responders, the target audiences for the scenario are lifeline operators and people involved in business continuity. Dr. Cox noted there will be impacts on structures, water facilities, telecommunications, community environmental health, the economy, the Internet, and Silicon Valley itself.

Dr. Cox said the scenario timeline has changed a bit, beginning with a Haywired kick-off meeting in April 2017 for all teams working on the event, the review panel, a new coalition of many partners to discuss ways to use this event throughout the course of the year to improve seismic risk reduction. Following the kick-off meeting, he noted, at least nine town-hall-style

workshops will be offered by PEER, the Association of Bay Area Governments, the Seismic Safety Commission, and others, to focus future efforts on a set of Haywired objectives. Dr. Cox stated that the initial April sessions will be partner-focused, and the scenario will be rolled out for the public on April 18, the day of the 1906 San Francisco earthquake.

Dr. Cox thanked the Commission for its support and involvement.

Mr. McCarthy said the Commission has been briefing the Governor's Office of Business and Economic Development on this issue, and he asked for copies of Dr. Cox's slides to provide to them and the Agency secretary.

Legislative and Communications Director Salina Valencia indicated that the staff has been briefing Agency representatives through the Communications Department, and they have offered assistance with a big public promotional campaign. She said she forwarded a press release about the Haywired event to the Governor's Office press secretary.

Chairman Gardner thanked Dr. Cox for his report.

IX. CHANGING PUBLIC EXPECTATIONS ABOUT THE SEISMIC PERFORMANCE OF BUILDINGS

Mr. McCarthy noted that the Commission has had several discussions at recent meetings about educating the public about the seismic provisions of the building code. He introduced Ms. Grace

Kang, Pacific Earthquake Engineering Research (PEER) Center, and invited her to discuss a proposal for a project to change public expectations about the seismic performance of buildings.

Ms. Kang stated that the purpose of this project is to bridge the gap between public expectations and perceptions about what the building code provides. She presented slides depicting recent California earthquakes, levels of damage, and repair costs, and she noted that each of these major earthquakes led to improvements in seismic provisions of the building code. Ms. Kang said the purpose of each additional code requirement was to reduce the loss of life by preventing buildings from collapsing and allowing occupants to evacuate safely. She remarked that members of the public are instructed to "Drop, Cover & Hold On," primarily to protect themselves from falling objects, hazards that could range from books and computers to ceilings, light fixtures, and partition walls.

Ms. Kang noted that if a building does not collapse in a major earthquake, it meets the code standard. She clarified that the code is a minimum standard, but it does not eliminate damage or ensure functionality. She showed slides depicting the kinds of damage that can occur in buildings constructed to code, including structural damage, cladding and stair cracking, damaged or disengaged ceiling lights and partition walls, and bent or damaged conduits or pipes and ductwork. Ms. Kang pointed out that buildings constructed to code, whether new or retrofitted, can still be yellow- or red-tagged after an earthquake.

Ms. Kang advised that PEER proposes creating an educational piece that summarizes these findings and provides information for different building heights, types, and functions. She said

there are good engineering solutions for reducing much of the damage that takes place, and PEER wants to provide information that applies to 95 percent of the building stock.

Ms. Kang observed that people incorrectly assume that new buildings designed to meet current codes would sustain very little damage, and PEER would like to help dispel this myth. She said because of this incorrect perception about code-designed building performance, building owners incur costs and time to repair, as well as business disruption, and the resulting social disruption.

Ms. Kang noted that PEER will work with the California Business Officials, Structural Engineers Associations, USGS, the City of San Francisco, the City of Los Angeles, and others to take advantage of their public communication resources. She said PEER proposes to create a summary report and a handout for public dissemination.

Chairman Gardner recommended approving the contract as proposed. He noted that the public does not understand that current building codes do not ensure the usability of a building after a big earthquake, and he expressed support for this effort.

Ms. Kang clarified that the tall buildings guidelines were developed to address buildings that fell outside the current building code, such as those over 240 feet, and the intent behind the guidelines is to bring performance to a level equivalent to code-designed buildings. She pointed out that the code standard is life safety and collapse prevention only, so new tall buildings will likely sustain more damage than the public anticipates. Ms. Kang said PEER's report will also address the performance limitations and expectations for retrofitted buildings.

Chairman Gardner recommended addressing the fact that even retrofitted buildings built to earlier codes will not perform as well, and then further and more detail study of the different types of susceptible buildings. Mr. McCarthy confirmed that this was the Commission's consensus at the earlier meeting, to bifurcate the project as described. He said Commissioner Kit Miyamoto then brought up the issue of tall buildings. Ms. Kang said the study will include tall buildings as one of the building types, and more in-depth information can be provided as well.

Ms. Kang indicated that PEER will engage the state agencies in these issues. She said she envisioned the report more as a grassroots piece to describe what would happen to a residence in an earthquake, impacts on work and business, and how the local government can use the information to enact measures to mitigate some of the issues in expected building performance.

Chairman Gardner agreed, and advocated focusing on state-level legislation, and then down through city and county governments. He observed that most single-family homes will fare well in an earthquake, but buildings with larger footprints or heights can suffer more damage than typical single-family homes. He said multiple-family homes tend to be at risk as well because they are larger.

Commissioner Hellweg said she reviewed the PEER project as a public information piece to educate the public about realistic expectations of damage and recovery. She recommended that the publication address possible ways a property owner can alleviate hazards. She noted that everyone should be encouraged to be more resilient, but individuals want to know what they can

do to improve the safety of their close environment. Commissioner Hellweg suggested including information on where people can go to find out what to do. Ms. Kang stated that there are a number of resources available, so the PEER report can easily identify those.

Chairman Gardner agreed that this information should be included. He noted that the Commission has resources and references that might be helpful. He said property owners building a new building should know how to make a building more resilient than the code, and also the cost of that upgrade. Commissioner Hellweg expressed support for addressing those points. Chairman Gardner observed that the intent of the report was both educational and as a resource.

ACTION: Commissioner Hellweg made a motion, seconded by Commissioner Beroza, that:

The Commission approve the PEER project as proposed.

* Motion passed, 10 – 0.

Chairman Gardner thanked Ms. Kang for her presentation.

X. LEGISLATIVE REPORT

Ms. Valencia noted the governor vetoed one bill the Commission was tracking AB 1783 (Dodd), regarding nonstructural and structural earthquake hazards in school facilities.

Ms. Valencia said the Legislature would adjourn on November 30 and reconvene December 5.

Ms. Valencia advised that Commissioners who are up for reappointment in May will be receiving calls from the Governor's Office appointment secretary within the next few months to find out if they are interested in being reappointed. Commissioners Hellweg, Knudson, Commissioner Gardner, Strack, Wheetley, and Rabbitt are up for reappointment in 2017.

Ms. Valencia said the California Pollution Control Financing Authority contacted the Commission regarding the CalCap seismic safety financing program established under SB 837, a budget bill that was signed by the governor. She explained that the California Seismic Safety Capital Access Loan Program received a one-time appropriation of $10 million to make loans available to residential property owners, including mobile homes, small business owners, and seismically retrofitted residential and commercial buildings She noted that the program places a high priority on small businesses located in soft-story, unreinforced brick and concrete buildings. Ms. Valencia advised that a CalCap workshop will be held on November 16 to solicit public comments on the regulations for this new loan program.

Ms. Valencia said CalCap's Director asked the Commission to review and comment on the regulations establishing the definition of a "soft-story building." She indicated that the staff responded that the Commission would consider taking on that task, but a rough draft of the regulations had not yet been received. She added that she and Senior Structural Engineer Fred Turner planned to attend the November 16 workshop and would keep the Commission informed.

Mr. McCarthy clarified that program features a loan guarantee to the bank for ten years, and then the repaid money goes back into a pool. Ms. Valencia stated that Assembly Member Nazarian had introduced legislation earlier in the year that asked for $60 million for retrofitting, and the $10 million is what was appropriated. She said the program is run out of the Treasurer's Office, which is currently understaffed.

Commissioner Hellweg asked for an update on the earthquake early warning advisory group. Mr. Ryan Araba, stated that at the end of the session, SB 438 was signed, which created an advisory board for the earthquake early warning system in California. He said the advisory board is comprised of board and state agency secretaries, a Senate and an Assembly appointment, a local government representative, a business appointee, and a utilities appointee. He noted the legislation identifies four specific work groups, and the advisory board will begin meeting next year.

XI. EXECUTIVE DIRECTOR'S REPORT

Administrative Reporting

Ms. Daniel reported that the accounting division was finally able to close the Commission's books for Fiscal Year 2015-16 after a five-month delay due to the Fi$Cal conversion. She said the Insurance Fund has a remaining balance of $17,398, up from $14,000 the prior year, and the CRAF research fund has a balance of about $4.1 million.

Ms. Daniel advised that budget projections for the 2016-17 fiscal year will probably not be available until January.

Ms. Daniel informed Commissioners that the Fair Political Practices Commission's filing is now electronic, and she said she would be sending filing instructions as soon as they become available.

Mr. McCarthy expressed his appreciation to Commissioner Rabbitt for his help in arranging the informative September meeting. He said the staff will work with winery representatives and Dr. Sumner from UC Davis on a new project.

Mr. McCarthy noted that Dr. Cox mentioned that the Haywired scenario event had changed to next April. He said the Commission originally planned to meet in Oakland last fall in conjunction with the event. He recommended that Commissioners identify possible locations of meetings away from Sacramento in 2017.

Chairman Gardner noted that the Commission has not visited the Imperial Valley in recent years.

Commissioner Hellweg pointed out that the Imperial Valley has the San Andreas Fault. She mentioned Palm Springs as a possibly meeting place.

Mr. McCarthy observed that the Commission is sponsoring a Jet Propulsion Laboratory (JPL-

NASA) research project, so another option would be to meet in the Pasadena area and tour the JPL facility.

The Central Coast was identified as another possibly location. Commissioner Hellweg noted that the Commission has met in Monterey and Santa Barbara, but not San Luis Obispo, an interesting site because of the Diablo Canyon Power Plant.

Chairman Gardner asked Commissioners to consider these ideas and make decisions at the January meeting.

XII. PUBLIC COMMENT

Mr. Mike Dayton, San Francisco Department of Emergency Management, invited the Commission back to San Francisco from April 4 through April 6, when San Francisco will conduct its annual earthquake exercise.

XIII. MISCELLANEOUS & GOOD OF THE MEETING

There were no other items brought to the Commission's attention.

XIV. ADJOURN

There being no further business, Chairman Gardner thanked everyone for attending, and the meeting was adjourned at 1:05 p.m.