

**NEVADA STATE BOARD OF PROFESSIONAL ENGINEERS AND LAND SURVEYORS**  
**Minutes of the Professional Association Liaison Committee Meeting**  
**Held virtually, Wednesday, May 19, 2021, at 11:00am**

Committee and board members participating were committee chairman, Matthew Gingerich, PLS; Karen Purcell, PE; Lynnette Russell, PE; and Angelo Spata, PE. Also joining were Patty Mamola, Executive Director; Murray Blaney, Operations and Compliance; and Louisa Kern, Administrative Assistant.

Participating from professional associations and public entities were:

*Doa Ross, Deputy General Manager of Engineering, Las Vegas Valley Water District*

*Brian Walsh, Sr Vice President, Residential*

*Mike Dishari, Director of Infrastructure Management, Las Vegas Valley Water District*

*Dave Rowe, President, SEASoN*

*Dr David James, UNLV, NSPE*

*Leslie Long, Development Services Manager, Clark County Water Reclamation District*

*Johnny Alhwayek, Principal Civil Engineer, Clark County Water Reclamation District*

*Andrew Hansen, Director, ASCE*

*Jamie Fitzgerald, Public Works Department, City of Henderson*

*Jonathan Tull, NSPE*

*Amanda Moss, Southern Nevada Homebuilders Association*

*Diane Hunt, Hunt Engineering*

**1. Meeting conducted by Matt Gingerich, call to order and roll call to determine presence of quorum.**

Mr Gingerich called the virtual meeting to order at 11:00am.

**2. Public comment period**

There was no public comment.

**3. Introductions**

Those participating in the committee meeting introduced themselves.

**4. Approval of February 9, 2021, Professional Association Liaison Committee meeting minutes**

PAL-02 A motion was made by Mr Fitzgerald, seconded by Dr James to approve the February 9, 2021 committee meeting minutes. The motion passed unanimously.

**5. Recap of September 28, 2020 PAL Committee meeting that focused on the quality of engineering and land surveying documents submitted to public agencies, please refer to [September 28, 2020 approved PAL Committee meeting minutes](#)**

Mr Gingerich reviewed the seven areas for potential action that were highlighted in the September 28, 2020, PAL committee meeting. He then opened the meeting for comments on quality of engineering and land surveying documents submitted to public agencies.

Ms Mamola said she had been contacted by Diane Hunt, Hunt Engineering, on the topic. She asked Ms Hunt to share her experiences with the committee.

*Ms Hunt – Just a little background on myself. I got my Nevada license back in 1988 and I've worked with several local firms. I have had my own company now for 25 years.*

*I recently was hired by a realtor client who is selling very expensive homes in the Las Vegas valley. They have asked me to review the structural documents and give my opinion on the structural integrity of the residences. And nine times out of 10, I found that the engineers do not quite understand lateral analysis. And I know that several years ago, I was hiring engineers I came up with a very short easy little quiz, and they couldn't answer one question and it made my hiring pretty difficult. In working with these engineers, I realize they don't understand lateral analysis. What I found is that the engineers my age, we seem to have learned correctly.*

*The younger engineers were learning when the town was growing so quickly, their supervisors would simply give them direction, tell them which walls to use as shear walls, instead of explaining that you break it down into diaphragms and then you do your shear walls. They were not taught correctly. Now these engineers have gone and opened their own companies, and they are continuing the same incomplete design. It is showing as cracks in the ceilings and cracks in the drywall. If we get our design load, or we get an earthquake, I do not think some of these structures are going to stand up.*

*In vertical analysis you are taking the weight and designing beams and designing columns, which is straightforward, and they can understand that. With lateral, you must design a diaphragm first, which would be somewhat like a beam, and then the columns would be the shear walls - you cannot design the columns without designing the beam. In the same manner, you cannot design shear walls without designing the diaphragm.*

*What's missing are chord forces, drag lines – the stiffened elements. Our job is to make sure that we define a load path, and when the load path isn't defined, then the wind and the earthquake have to meander through the structure to find relief. That's when you start getting excessive movement and rotation and cracking.*

*There's just a lot that engineers are missing. The structures, they're still standing because we're not seeing the wind load that we design for. We design for a hundred mile an hour wind. We maybe get gusts up to 60mph, so we're not even getting half the wind pressure. And of course, we haven't had earthquakes. As the engineers in my generation start to retire, we are going to have to rely on these newer engineers and we need to get it corrected.*

*That is the concern that I brought to the board's attention and I'm very happy that they responded to me. I really appreciate you guys listening to me today.*

Ms Mamola asked if the issue was designs by CEs doing structural work or was it also an issue on designs by SEs.

Ms Hunt – *On the projects that I reviewed they're civils. In some cases, the structure was too tall, but it still was designed by a CE. So that was a big concern. But I have had to redo calculations that were done by a SE on a house, because I see that SE engineers with steel and concrete and masonry, they don't work with wood as much as a CE does and they seem to have a little difficulty in scaling down their loads. They're used to 40, 50, 90,000 pounds and we're dealing with 4 and 5,000 pounds, so the connections are a lot less. The couple that I have redone from an SE, the connections were just crazy - it was way over designed; everything was over-designed, and I had to start from scratch. I don't agree that civil engineers should be limited in height. I think the civil engineers that do these houses should be able to do taller structures. It is not the heights that's the problem, it's the complexity of the structure.*

*Commercial structures are boxes. In a house you've got different heights, you've got extensions going off at an angle. You have so many more changes in the outline of the structure and that's where the engineer has to know how to do drag loads, how to do forces, how to put diaphragms in rotation.*

*I might be speaking outside what I know, but I think civil engineers need to be a little more educated, especially on lateral analysis. And I think that they should be allowed to do the taller structures than 45 feet. It doesn't cut it when you have a basement and then two floors above - I've had to turn work down and they have to go get an SE; and a SE is quite a bit more expensive. I'm not sure they're going to give you a better product than what a CE can do because houses are a lot more complicated than a commercial structure.*

Ms Mamola thanked Ms Hunt for her comments. She said relating to the current regulations limiting the height of design could perhaps be revisited by a sub-committee of civil and structural engineers. **(ACTION Item)**

Mr Gingerich asked Ms Hunt if the lateral issues should be identified in the plan review process.

Ms Hunt – *No, it's not being caught. When an engineer shows shear walls the plan checker will note it has been addressed and assume the professional has done the work competently. So, no, it is not getting caught.*

Mr Rowe – *I think Diane has a very good point about the standard of care. I think some of this is somewhat unique to the custom home market, but I think it extends beyond that. You know, when we talk about custom homes, we can't compete in that market because the engineers that do that, they're very small engineers that work by themselves and they don't go through the level of detail that we try to get to you - and that I think Diane tries to get to. So, it's somewhat unique.*

*Then when you have submitted a plan check it depends on the agency and who you get assigned as the plan checker. It depends on a lot, but they can't go through everything. They go through their checklist, but they just can't go through the whole thing. They just don't have the budget to do that, so it's something that's very difficult for them to check.*

*Ms Hunt – Problems can be remedied in construction with a knowledgeable contractor, but when you get a contractor that does not know what he's doing, and you have an engineer that doesn't know what they're doing, then you have a disaster.*

*Even in tract homes, when they have umpteen different options, I just had to fix a house where one option was chosen but the drag lines were not put in. This homeowner kept having cracks in his wall sheeting, and I was able to fix it, but I argued with the engineers about the missed dragline load. The contractor's board had to get involved and made the decision to do my repair instead of the engineer of records repair and it fixed the problem. And in this instance, that engineering company charged the developer for going out and looking at the problem and coming up with a letter and a repair – but it was his error, which is just ludicrous.*

*I've been involved in homes that have gone through lawsuit where the architects say we're putting travertine or marble on this floor and the engineer doesn't: number one, add the weight; and number two, doesn't limit the deflection - which is required by the marble institute. And of course, the plan checker had no idea – nor should they. It's the engineer's responsibility. As a result, this very expensive marble tile cracks and the engineer was sued and he did not carry E & O insurance, so he walked away. It's just crazy what I am seeing.*

Mr Gingerich said the issues could present an opportunity to for SEASoN to engage its membership before anything would need to elevate to the board level.

In the virtual meeting chat comments Dr James mentioned structural timbers classes offered over the summer by UNLV as an option to address lateral load training. Ms Mamola added that it could also be addressed in professional organization continuing education coursework.

Ms Mamola said forming a sub-committee to review regulations relating to structural limitations placed on civil engineers could be considered. (ACTION Item)

Mr Gingerich asked for input from agencies on the quality of plan submittals.

Ms Ross said firms should consider a more formalized internal review before submittals are released to agencies. Where another company engineer not directly associated with the specific project performs QA/QC before documents are submitted. She added it would create more work for the firm on the front end but would likely save time and money in the long run.

Ms Hunt said smaller firms may not have the ability to have a second set of eyes review before submittal but ultimately it is the designing professional's responsibility when they seal and sign, that they have produced a complete document that is buildable. To submit something that is knowingly incomplete is unethical.

Ms Moss said her membership is very interested in understanding and being part of the process to address any issues relating to the quality of plan submittals. She added it would be beneficial to getting a list of common mistakes made in submittals that can be used as an educational resource that can be shared among organizations.

Mr Gingerich agreed and suggested each agency draft a “top 10” list of common issues relating to submittal quality that they are experiencing. He said the lists can then be shared among the participants. (ACTION Item)

Ms Mamola said the combined listings from the agencies could serve as a future newsletter article circulated to all licensees. (ACTION Item)

Ms Long said from plan review statistics at water reclamation, the number of projects going to third review and beyond is above 30%. She added the agency strives to maintain consistency in the review process – but it does happen when a different reviewer will catch something that was overlooked earlier. Our goal is to try to not to go to multiple reviews.

Ms Ross said a challenge in the submittal process is that dry utilities are not required to be on civil plans. An engineer must locate the wet utilities to avoid conflicts, but the locations of the dry elements are often unknown. As their locations are revealed, changes must be made to the design requiring additional reviews and delays. If the dry utility locations were known upfront the process of design through construction would be much more efficient.

Mr Gingerich said that is good point and could spur more conversation on the issue.

Mr Dishari said an issue seen often is that plans are submitted very early in the design process where they are not complete, and even though the district has the right to reject them, we accept them and give the engineer the benefit of the doubt over minimum technical requirement, but by the third and fourth reviews the design is still not complete. This is a challenge we need to overcome. Mr Dishari added that the agency has and continues to engage with engineers, developers, and the home builders association to work toward improved quality of submittals and an efficient and timely review process.

Ms Russell said if agencies are continuing experience issues with certain engineers relating to quality then some responsibility needs to lie with the agency to give the licensee direct feedback. If direct feedback is not being given, the licensees may not think they are doing anything wrong. And then if the situation continues, let the board know so action can be taken.

Mr Fitzgerald said what Henderson is experiencing more now, then in the past, with designs changing mid review. He said since meetings on the issue have started, they have been tracking what's causing reviews to go longer, a significant number of projects are seeing substantial changes during the time of review. It is apparent that the initial design has been rushed and changes in review create a waterfall effect. Mr Fitzgerald added, as mentioned earlier by Ms Ross, dry utility coordination has become an issue, particularly with more narrower street sections being allowed across the valley. We've tried to address it somewhat by requesting a cross-section of where the dry utilities are supposed to be located so potential conflicts can be seen in the planning stage.

Ms Moss said adding to the conversation, there is a concern from membership about some inconsistencies of the actual revisions themselves which can cause design changes and subsequent conflicts. Where the waterfall effect is caused by the reviewer. As part of the education process, much like the top-10 lists that will be put together by each agency, we are developing a similar list of issues

from membership that are generated by plan-checkers. It will give full perspective and provide feedback where there is some fault on the agency side too.

Mr Walsh said from a developer's perspective, it would be helpful to be included or informed about agency revision meetings or be copied on redlines so we know what kind of quality plans that our consultants are submitting or lack of quality plans they are submitting. Ultimately it is the owner of the property that is impacted by revision delays. He said he was concern about the possibility of fines being levied against projects that went beyond a third review – again with the cost being the burden of the owner but the fault often lying somewhere between the engineer and the reviewers.

#### **6. Discussion of updates to Nevada Administrative Code 625**

Because of time constraints there was no discussion on this agenda item.

#### **7. Discuss board's updated Strategic Plan—goals and strategies related to PAL Committee and discuss possible tactics/action items.**

Because of time constraints there was no discussion on this agenda item.

#### **8. Discussion of Digital Signature/Electronic Submittal Working Group and the Electronic Submittal Digital Signature Guide**

Because of time constraints there was no discussion on this agenda item.

#### **9. Nevada State Board of Professional Engineers and Land Surveyors activities**

Because of time constraints there was no discussion on this agenda item.

#### **10. Professional association / industry activities**

Because of time constraints, there was no discussion on this agenda item.

#### **11. Open discussion topics**

No topics were put forward for discussion.

#### **12. Next meeting date and location**

After discussion it was decided the next meeting will be held virtually from 11:00am to 12:30pm on Wednesday July 7, 2021. {This was later scheduled for July 13, 2021, at 11:00 am.}

Ms Mamola said she would send a calendar invite as a reminder for the group. (ACTION Item)

#### **13. Public comment period**

There was no public comment.

**14. Adjourn**

Mr Gingerich thanked those that joined the meeting for their participation and adjourned the meeting at 12:15pm.

Respectfully, Patty Mamola  
Executive Director