CITY OF FLORENCE PLANNING COMMISSION
January 27, 2015 ** MEETING MINUTES **

CALL TO ORDER – ROLL CALL – PLEDGE OF ALLEGIANCE

Chairperson Hoile opened the meeting at 7:00 p.m. Roll call: Commissioners: Curt Muilenburg and John Murphey were present. Commissioner Bare and Burns were absent and excused. Also present: Planning Director Wendy FarleyCampbell and Assistant Planner Glen Southerland.

APPROVAL OF AGENDA

Commissioner Murphey motioned to approve the Agenda, Commissioner Muilenburg seconded. By voice, all ayes, with the exception of Commissioners Bare and Burns, who were not present. The motion passes.

APPROVAL OF MINUTES

Commissioner Murphey motioned to approve the Minutes of December 9th, 2014, Commissioner Muilenburg seconded. By voice, all ayes, with the exception of Commissioners Bare and Burns, who were not present. The motion passes.

There was not a quorum of commissioners attending the meeting of January 13, 2015 present.

PUBLIC COMMENTS

*This is an opportunity for members of the audience to bring to the Planning Commission's attention any items **NOT** otherwise listed on the agenda. Comments will be limited to **3 minutes per person**, with a maximum time of 15 minutes for all items.*

John Robertson – 4385 Rhododendron Drive, Florence, OR 97439

Mr. Robertson stated that he was a property owner of two lots in the Coast Guard Estates subdivision. He said that one lot abutted the Coast Guard lot and one was 342 feet from the Coast Guard fence. He stated that from December 2013 to February 2014, the Coast Guard had driven piles as part of the approval they had received for rip rap installation. Mr. Robertson gestured to Mr. Steve Templin in the audience and stated that he was the Coast Guard station's Master Chief and that he had been to his office to discuss the damage to his home. Mr. Robertson stated that two people were sent to inspect his home, a lieutenant from the Coast Guard and the owner of the crane and barge company installing the piles.

Mr. Robertson distributed paper documents to the Planning Commissioners (attached) and asked the Commissioners to turn to page 3. He stated that similar equipment had been on a barge for 45 days driving pile that had damaged his home. Mr. Robertson stated that he had received bids from $185,000 to $225,000 to repair the damage. He said that the Coast Guard had sent an officer to their home on two occasions and reports were written. Mr. Robertson stated that he had submitted what he had been told to submit to the Norfolk, VA claims office. Chairperson Hoile asked what Mr. Robertson was asking of the Planning Commission. He stated that he would like the Planning Commission to keep in mind that they were citizens of America and that the Coast Guard had not done a good job of resolving the first problem that they have had.

Mr. Robertson said that it had been three months and he had not heard from them until he received a phone call from them the Friday before the meeting. He said that the letter he received stated that his claim was denied, that he could pursue a claim in a U.S. District Court within six months of the date of the letter, and that people from the Coast Guard had been at his house. Chairperson Hoile stated that the Planning Commission understood that. Mr. Robertson stated that he was a retired military man and that it was too bad he had to hire expensive attorneys and go to a federal court in order to get his problem solved. He stated that he had asked for copies of the reports regarding his claim and has never received a response. He asked the Planning Commission to give serious thought to letting the Coast Guard do whatever they want. He said that

he thought the day of the hearing was the last possible day to extend the application because there would no chance for rebuttal.

Mr. Robertson asked the Planning Commission to look at page 11 of his homeowner's insurance policy which stated that his policy would not pay for the repairs to his home. He restated his dissatisfaction with the administration of the U.S. Coast Guard and that he hoped the Planning Commission would consider the issue.

Steve Templin – 644 A Street, Springfield, OR 97477

Mr. Templin stated that for clarification, he was with ODOT and was not affiliated with the Coast Guard.

Mr. Robertson apologized and stated that the gentleman he spoke to from the Coast Guard station resembled Mr. Templin.

PUBLIC HEARINGS:

Chairperson Hoile said that there were four public hearings before the Planning Commission that evening. The hearing would be held in accordance with the land use procedures required by the City in Florence City Code Title 2 Chapter 10 and the State of Oregon. Prior to the hearing(s) tonight, staff will identify the applicable substantive criteria which have also been listed in the staff report. These are the criteria the Planning Commission must use in making its decision. All testimony and evidence must be directed toward these criteria or other criteria in the Plan or Land Use Regulations which you believe applies to the decision per ORS 197.763 (5). Failure to raise an issue accompanied by statements or evidence sufficient to afford the Planning Commission and parties involved an opportunity to respond to the issue may preclude an appeal of this decision based on that issue. Prior to the conclusion of the initial evidentiary hearing, any participant may request an opportunity to present additional evidence, arguments or testimony regarding the application. Failure of the applicant to raise constitutional or other issues relating to proposed conditions of approval without sufficient specificity to allow the Planning Commission to respond to the issue that precludes an action for damages in circuit court. Any proponent, opponent, or other party interested in a land use matter to be heard by the Planning Commission may challenge the qualification of any Commissioner to participate in such hearing and decision. Such challenge must state facts relied upon by the party relating to a Commissioner's bias, prejudgment, personal interest, or other facts from which the party has concluded that the Commissioner will not make a decision in an impartial manner.

FILE PC 14 24 EAP 02 – COAST GUARD RIP RAP EXTENSION: A request for an extension, ending January 27, 2016, to the approved conditional use permit for the Florence Coast Guard Station rip rap revetment installation, located at Assessor's Map # 18-12-15-33 Taxlot 00600 (Original Files # PC 13 09 CUP 03).

Chairperson Hoile opened the hearing at 7:11 p.m. and asked if any of the Planning Commissioners wished to declare any conflicts of interest, ex parte contacts, site visits, or bias. No Commissioner had anything to declare. Chairperson Hoile asked if the public had any challenges to any commissioner's impartiality in making this decision. There were no challenges. Chairperson Hoile asked for the staff report.

Staff Report

AP Southerland presented the applicable criteria for the extension and gave a short introduction to the project. He presented maps of the site showing the location, extent of proposed rip rap revetment, and historic erosion of the shoreline.

AP Southerland stated that Chief Lynn Lamm of the Florence Police Department had replied to the request for referral comments and that he had no concerns with the project. AP Southerland stated that there had been no public testimony received.

AP Southerland stated that staff recommended approval of the extension of the previous approval period subject to the conditions of approval recommended. He stated that the resolutions listed under Condition 3 were incorrect and should have read PC 13 09 CUP 03 as the original approval and PC 14 24 EAP 02 for the current proposal.

Commissioner Muilenburg asked why the construction that has been performed was not substantial enough to prevent the applicant from needing to apply for an extension. Commissioner Muilenburg asked if AP Southerland had had a chance to review the materials submitted by Mr. Robertson. AP Southerland stated that he had just received those materials at the hearing and had not reviewed them, but had not heard of this issue prior to the hearing.

Commissioner Muilenburg asked if AP Southerland knew of any conditions which would deal with the damage to Mr. Robertson's home. AP Southerland stated that the application had been handled by someone at LCOG. PD FarleyCampbell stated that the application had been received prior to AP Southerland working with the City and prior to her return from duty overseas.

Commissioner Muilenburg asked PD FarleyCampbell to comment on the matter brought up by Mr. Robertson. PD FarleyCampbell stated that she had prepared some comments. She stated that Mr. Robertson's concerns were not specifically related to this application and were not part of the criteria the Planning Commission was reviewing that evening and would be a civil matter, but were related to this matter and Mr. Robertson should have reserved his comments for the testimony portion of the hearing. She stated that if Mr. Robertson did not testify during the hearing, he would not have a standing for appeal. PD FarleyCampbell added that because Mr. Robertson did not testify at the correct time, his comments could not be considered by the Planning Commission unless he chose to come forward again and state that he would like those comments to be considered.

Chairperson Hoile asked if there was a copy of the original resolution and conditions of approval available or if the conditions they had been given were the same as the Resolution PC 13 09 CUP 03. AP Southerland stated that Condition 3 adopted all of the conditions of approval for the previous resolution. PD FarleyCampbell offered to provide a copy of Resolution PC 13 09 CUP 03 while they took the testimony of the applicant. Chairperson Hoile asked if that was what Commissioner Muilenburg would like. Commissioner Muilenburg responded that he would like to see that resolution and that sometimes there are special conditions that they may like to see.

Applicant Testimony

Roy Clark – 1301 Clay Street, Suite 700, Oakland, CA 94612

Mr. Clark introduced himself as a Civil Engineer with the U.S. Coast Guard out of Oakland, CA. He stated that he was responsible for the permitting of both the boathouse expansion and rip rap installation. Mr. Clark stated that they were separate permits and the rip rap permit was the approval that needed the extension because the state-level permitting process was rather long. He stated that the Coast Guard had received a biological opinion by the National Marine Fisheries on December 30, 2014 after meeting their requirements for mitigation. He said that the Army Corps of Engineers and water quality permits were the last steps needed before construction could begin and they anticipated being able to start work on November 1st for the beginning of the in-water work period.

Mr. Clark stated that they could agree to all of the current and previous conditions of approval. Chairperson Hoile stated that she would like to review the conditions of approval prior to asking Mr. Clark to do that.

Chairperson Hoile asked if the pile-driving would continue as part of the revetment installation. Mr. Clark stated that there would be no pile-driving, but there would be heavy equipment involved.

Chairperson Hoile asked for any proponents, opponents, or interested neutral parties that would like to speak.

Opponent Testimony

Chairperson Hoile stated that she would assume that Mr. Robertson would like to come forward again and testify during the hearing. Mr. Robertson asked if his first comments meant anything. Chairperson Hoile stated that he could come forward and state that he would like his previous comments to be considered as part of this testimony so that he would not have to repeat everything. She asked him to come forward, state his name and state that the comments made previously apply to this hearing. Mr. Robertson stated that he understood.

John Robertson - 4385 Rhododendron Drive, Florence, OR 97439

Mr. Robertson introduced himself and stated that while Mr. Clark may have said that everything is going well with the project, it was not. He directed the Planning Commission to page 11 of the report titled "The necessity of condition surveys for structural protection against pile driving effects" (attached) and stated that surveys of structures should be performed before, during, and after pile installation. He said that surveys should be used together with vibration monitoring and control and stated that the Coast Guard did not monitor the effect of their pile installations.

Mr. Robertson said that Andy Johnson sent a letter (attached) stating his opinion that the home was damaged by the pile installation and that even if repaired, the home would be a "stigmatized" or "red flag" property.

Chairperson Hoile asked if Mr. Robertson was opposed to the extension. Mr. Robertson said that he was a good U.S. citizen that lived on the river and understood that the Coast Guard needed this revetment and had no problem with that. He said that he understood that the Coast Guard would not need an approval until August or November and suggested that the decision not be reached. Mr. Robertson invited the Planning Commission to his property and offered to hire an engineer. He asked that the Coast Guard not be given permission at this time.

Applicant Rebuttal

Mr. Clark stated that he felt for Mr. Robertson and pointed out that the last paragraph of the letter received by Mr. Robertson stated that he could contact the Legal Service Command in Alameda. Chairperson Hoile stated that this issue was part of the larger approval, but not the extension in particular.

Chairperson Hoile asked for staff response. Chairperson Hoile stated that PD FarleyCampbell had distributed the original resolution PC 13 09 CUP 03 and that there appeared to be eight conditions of approval. Mr. Robertson asked that the conditions of approval be read. Chairperson Hoile offered Mr. Robertson a copy and stated that the conditions of approval were lengthy. Mr. Clark offered Mr. Robertson his copy of the resolution.

PD FarleyCampbell stated that the only condition that may apply to Mr. Robertson's situation would be the condition regarding timing of work and said that the issue may be a contract issue. Commissioner Muilenburg asked if the window for Mr. Robertson's concerns would have been during the hearing for the original approval. PD FarleyCampbell concurred and said that staff could do some research to see if other communities are adding conditions of approval for the protection of citizens in the future.

Chairperson Hoile asked AP Southerland to restate staff's recommendation. AP Southerland restated staff's recommendation that the extension of approval period be approved. Chairperson Hoile stated that the applicant has already stated that they agree to the previous and current conditions of approval.

Chairperson Hoile closed the hearing at 7:34 p.m.

Commission Discussion

Commissioner Murphey stated that he believed that the Planning Commission could only use criteria in City Code to make a decision and it sounded like the issue lie between Mr. Robertson, the Coast Guard, and the contractor and would not affect their decision. Chairperson Hoile said that she thought the Planning Commission should look into applying a condition of approval that requires monitoring during construction in order to protect homeowners.

Commissioner Murphey motioned approve Resolution PC 14 24 EAP 02, Commissioner Muilenburg seconded the motion. By roll call vote: Commissioner Muilenburg "yes"; Commissioner Murphey "yes"; Chairperson Hoile "yes." Commissioners Bare and Burns were absent and excused. The motion passed.

FILE PC 14 25 EAP 03 – MUNSEL LAKE VILLAGE EXTENSION: A request for an extension, ending January 27, 2016, for the approved conditional use and design review permits, and ending July 27, 2016 for the approved PUD for the Munsel Lake Village development, located at Assessor's Map # 18-12-14-20 Taxlots 1203, 1205, & 1206 (Original Files # PC 08 26 PUD 02, PC 08 27 CUP 05, PC 08 39 DR 13, and Ordinance No. 1, Series 2010).

Chairperson Hoile opened the hearing at 7:37 p.m. and asked if any of the Planning Commissioners wished to declare any conflicts of interest, ex parte contacts, site visits, or bias. Chairperson Hoile stated that she had received a question with Council Chairman Bob Garcia regarding the time of his item on the Planning Commission agenda. Chairperson Hoile asked if the public had any challenges to any commissioner's impartiality in making this decision. There were no challenges. Chairperson Hoile asked for the staff report.

Staff Report

AP Southerland introduced the application and listed the criteria for the extension. He stated that the PUD included nine multi-family buildings, one community building, and one commercial building. He added that the CUP was for a drive-thru window in the commercial building and that the Design Review approval was for all the proposed buildings. AP Southerland said that with the approval periods originally issued and the special extension issued by Ordinance No. 1, Series 2010, the applicant had an approval period that lasted until December 17, 2014 and a normal extension period remaining for all applications.

AP Southerland stated that staff recommended that the approval periods for the PUD, CUP, and Design Review be extended 18-months for PUD and 1-year for CUP and Design Review.

Chairperson Hoile asked if the resolutions listed in Condition 3 of Resolution PC 14 25 EAP 03 were applicable. AP Southerland stated that they were correct and that the condition existed in order to make sure that there were no conflicts with the previous approvals.

Commissioner Muilenburg asked if the Design Review was still intact. AP Southerland confirmed and stated that this extension would extend the original approval, which the applicant could then modify if needed. Commissioner Muilenburg asked if the 18-month extension would be the final extension.

Chairperson Hoile suggested that in the future the previous resolution being extended be an exhibit to the resolution. She stated that she remembered that there were quite a few conditions of approval. Commissioners Murphey and Muilenburg concurred. PD FarleyCampbell said that they should be exhibits to the resolution.

Applicant Testimony

Mr. Garcia stated that it was interesting looking at the history of the project stretching back to before Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians (CTCLUSI) involvement. He said that he thought there was a real need for affordable housing in the community, but added that the funding for

affordable housing was very competitive. Mr. Garcia stated that the next round of funding would be coming up in February.

Public Testimony

Chairperson Hoile asked for any proponents, opponents, or interested neutral parties that would like to speak. There were none.

Chairperson Hoile closed the hearing at 7:49 p.m.

Commissioner Muilenburg motioned approve Resolution PC 14 25 EAP 03 with the addition of the previous approvals, Commissioner Murphey seconded the motion. By roll call vote: Commissioner Muilenburg "yes"; Commissioner Murphey "yes"; Chairperson Hoile "yes." Commissioners Bare and Burns were absent and excused. The motion passed.

FILE PC 14 22 CUP 09 – SIUSLAW RIVER BRIDGE CUP: A request by the Oregon Department of Transportation for a Conditional Use Permit to add fill to the Siuslaw River for the purpose of supporting temporary work platforms and a containment structure alongside the Siuslaw River Bridge for repair work and cathodic protection taking place for about three years from approximately 2015 to 2019. This is a continuance of a public hearing held on Dec. 9, 2014.

Chairperson Hoile opened the hearing at 7:50 p.m. and asked if any of the Planning Commissioners wished to declare any conflicts of interest, ex parte contacts, site visits, or bias. No Commissioner had anything to declare. Chairperson Hoile asked if the public had any challenges to any commissioner's impartiality in making this decision. There were no challenges. Chairperson Hoile asked for the staff report.

Staff Report

AP Southerland listed the applicable criteria for the application and gave a short introduction to the bridge project. He presented maps of the planned work staging areas, work platforms, and eelgrass beds. AP Southerland stated that ODOT would have an expert onsite to protect the eelgrass beds at all times during construction.

AP Southerland presented elevations of the proposed work platforms and stated the platforms would be constructed at a height of approximately 14 feet above mean sea level, lower than the bridge deck. He stated that the proposed work platforms would be supported by pilings. AP Southerland stated that the containment structure and the method of construction for that structure would be selected by ODOT's winning bidder.

AP Southerland stated that referral comments were received from Jason Kirchner from the Oregon Department of Fish and Wildlife and Chief Lynn Lamm. He stated that no public testimony had been received.

AP Southerland distributed Exhibit L to the Planning Commission regarding periods of work to the Planning Commission. He said that the applicant felt that the proposed Condition 6.2 would place too much restriction on their periods of night work. AP Southerland stated that the applicant's contract with a potential bid winner would provide noise guidelines and read those guidelines.

AP Southerland stated that the nature of the project required night time work and that there would be no pile driven at night. AP Southerland stated that the applicant had received a noise variance from the City for the project. He said that staff suggested changing the proposed Condition 6.2 in order to accommodate this work. AP Southerland stated that it was unclear whether or not Condition 5.1would be necessary, but was included to protect property owners near the bridge. He continued listing conditions of approval.

Commissioner Muilenburg asked who approved the noise variance issued by the City. AP Southerland stated that the City Manager had approved that variance.

Commissioner Muilenburg asked if there was a way to expand Condition 12 to make sure that the City had no responsibility for damage done to structures as a result of pile driving. AP Southerland stated that the applicant was not yet sure how their contractor would be driving those piles, either by impact or vibration. Chairperson Hoile wondered if there was a way to check for damage before and after pile driving. Commissioner Murphey concurred that he would like to see some sort of inspection both before and after pile driving to check for damage. He also inquired what parking loss there would be on Bay Street and said that it would be nice if the applicant could arrange for overflow parking at a location such as the Lotus restaurant.

Commissioner Murphey asked if the engineer approving work outside of the time periods given in the contract would be ODOT's engineer. AP Southerland confirmed that it would be ODOT's engineer. Commissioner Murphey said that he believed the engineer would approve work outside of those approved work times in order to get that work done. He said that he did not know if he would be opposed to that, but that it was something to think about. Chairperson Hoile said she would be opposed to it because she would like the neighbors and City notified. Commissioner Murphey said that the City has had issues in that area and would like to prevent damage or noise nuisances. Chairperson Hoile stated that she did not think that the approval would be denied, but that it would be a courtesy to inform the public.

Chairperson Hoile asked if there was a condition requiring the under-bridge parking area to be put back to its original condition following the construction project. AP Southerland stated that the applicant had assured that the restoration of the parking lot would happen and that it was an item in their bid contract, but that it was not a condition. She asked how close the staging area was to the parking area and condominiums. AP Southerland stated that it was the entire under-bridge right-of-way. Chairperson Hoile asked if the surrounding properties were noticed about the proposed project. AP Southerland confirmed. She said that she was concerned because no public had come to the meeting. PD FarleyCampbell stated that there had been a great deal of public outreach and that may account for the lack of public attending the meeting and added that the under-bridge parking area was part of the ODOT bridge right-of-way.

Commissioner Murphey asked if the platforms would interfere with the opening/closing of the drawbridge. AP Southerland stated that the platforms would not extend into the drawbridge area and would not interfere with its operation.

Chairperson Hoile asked if the applicant had met with the City Council for their noise variance and why that would not be included as an exhibit. PD FarleyCampbell stated that they received their noise variance from the City Manager, not the City Council. AP Southerland added that he had not known about the variance until the day of the hearing. Chairperson Hoile stated that her concern was with citizens coming to the City or Planning Commission upset with the noise level.

Chairperson Hoile asked that Condition 13 read that the CTCLUSI Cultural Resources Protection Specialist or their designee be notified in the event of the uncovering of resources. She stated that there is sometimes not a person in that position so it is important to state that a designee be assigned or the Tribal Administrator be named in the condition. Chairperson Hoile added that it was also important to note that the CTCLUSI be contacted rather than the Siletz, who are not in this area.

Applicant Testimony

Jeff Lange – ODOT, 644 A Street, Springfield, OR 97477

Steve Templin – ODOT, 644 A Street, Springfield, OR 97477

Mr. Lange introduced himself as the Design Project Leader for the Siuslaw River Bridge project. He stated that he handles project design to bid let.

Mr. Templin introduced himself as the Construction Project Manager and said that he was also the project manager for the bridge project in 2010. He said that he understood many of their concerns and could address many of them. He introduced the project and explained its purpose as a preservation project.

Mr. Lange stated that ODOT had hired Cogito to handle public outreach and they would be continuing to inform the public about the project.

Mr. Templin stated that the project was designed through talking to contractors and trying to determine all of the different ways that the project could be completed. He stated that the work platforms may never be built, but ODOT had to ensure that the contractor could construct those if needed. He stated that he would be the project engineer approving work beyond those hours listed in the ODOT bid contract. Mr. Templin stated that it was necessary that the sandblasting and zincing take place during day/night shifts because of the need to avoid moisture buildup. Commissioner Murphey stated that there were some quieter generators available now.

Mr. Templin stated that there were significant requirements in their contract for pile driving and said that he would be open to any conditions that would indemnify the City without shifting responsibility to ODOT. He stated that he would like to avoid ODOT receiving claims for pre-existing damage. Mr. Templin stated that the under-bridge parking area would be returned to its original state.

Mr. Templin stated that he believed that after talking to some of the contractors, work platforms may not be necessary and may be very expensive for the project. He thought that some contractors may use cranes and other methods to hang platforms from the bridge. Mr. Templin stated that he would be happy to return to the Planning Commission to inform them of what methods will be used.

Chairperson Hoile asked if ODOT had considered staging their equipment at a different location such as the vacant Lotus restaurant. Mr. Templin said that because that was private property, those were not looked at. PD FarleyCampbell added that it may be also in their interest to identify parking in order to avoid the contractor's vehicles parking in timed parking areas on Bay Street. Mr. Templin stated that regardless of what the contractors were working on, they would likely access the work site from the top of the bridge and would use either the south staging area or the limited parking by the Dairy Queen. He said that ODOT could work with the contractor to avoid parking on Bay Street. He added that if fencing was put up, the parking spaces on Bay Street adjacent to the staging area could also be lost.

Commissioner Murphey said that he was asked by a member of the public if the process would strengthen the bridge. Mr. Templin said that the process would keep the reinforcement inside the concrete from degrading, so would keep it at the same strength, but that some small seismic improvements would be made.

Commissioner Muilenburg asked if the state guidelines quoted for the noise control were state law because of the mentioned Oregon Revised Statute. Mr. Templin said that the excerpt was taken from their contract. He added that he was concerned about the noise condition of approval because it could impact the entire job and increase costs of the project considerably. He added that he was not concerned about screening because that was a relatively low-cost change order.

Commissioner Murphey asked when work would begin. Mr. Templin stated that the contractors he spoke to were interested in beginning work this summer with replacing bridge rails. Commissioner Murphey said that wind direction would help with noise mitigation during the summer.

Commissioner Muilenburg pointed out that the side of the bridge is frequently hit at the southeast corner. Mr. Lange stated that there would be ADA sidewalk improvements. Mr. Templin stated that sidewalk would

be added between the Lighthouse Motel and the bridge at the northwest corner. Chairperson Hoile said that the improvements would not widen the bridge.

Public Testimony

Chairperson Hoile asked for any proponents, opponents, or interested neutral parties that would like to speak. There were none.

Staff Response

AP Southerland said that there was no response except to suggest that the noise language be changed. Chairperson Hoile asked if the ODOT contract language would be added the conditions of approval from Exhibit L. Commissioner Muilenburg said that he was okay with the change to the language. Commissioner Murphey agreed. Chairperson Hoile would like the City and neighbors notified.

Commissioner Murphey asked if notification could be given when pile driving or night work was going to begin. Mr. Templin said that they would not have any problem with that and could notify the public regarding times and activities being performed.

AP Southerland suggested that the condition regarding noise state "except as granted through noise variance." Chairperson Hoile stated that she was concerned for citizens who may have been following the process and did not know the new times work was allowed. AP Southerland replied that he could add the entirety of the language to the condition. Commissioner Muilenburg stated that staff should keep the language about the in-water work period.

Chairperson Hoile asked if they had decided whether or not a condition should be added regarding the restoration of the parking area. Commissioner Muilenburg stated it should. Commissioner Murphey suggested that the restoration language match the contract language as much as possible. Commissioner Muilenburg added that he was okay with the recommendation regarding pilings.

Chairperson Hoile closed the hearing at 8:50 p.m.

Commission Discussion

Chairperson Hoile said that she felt comfortable that Condition 12 was general enough. Commissioner Muilenburg agreed.

Commissioner Murphey stated that he was glad that the state was preserving history by restoring the bridge rather than letting it deteriorate and building a new bridge.

Chairperson Hoile asked if the Planning Commission if they would like ODOT to inform them what will be taking place. Commissioner Murphey suggested a written report. Mr. Templin stated that it may be best to allow the ODOT public information person to work with the City Manager and City Council.

Chairperson Hoile asked if ODOT agreed with the conditions of approval. Mr. Templin and Mr. Lange stated that they did.

Commissioner Murphey motioned approve Resolution PC 14 22 CUP 09 with the addition of language regarding noise control and other discussed changes, Commissioner Muilenburg seconded the motion. By roll call vote: Commissioner Muilenburg "yes"; Commissioner Murphey "yes"; Chairperson Hoile "yes." Commissioners Bare and Burns were absent and excused. The motion passed.

FILE PC 14 26 TA 03 – MEDICAL MARIJUANA TEXT AMENDMENTS: A proposal by the City of Florence, initiated by the Florence City Council at their Oct. 20, 2014 meeting, to establish locational, site

design, and operational criteria related to medical marijuana. These text amendments will establish appropriate zoning for medical marijuana facilities as well as establishing minimum listed distances from residential zones, public libraries and parks, child care facilities licensed by the Oregon Dept. of Education, and public and private schools attended primarily by minors.

Chairperson Hoile opened the hearing at 9:03 p.m. and asked if any of the Planning Commissioners wished to declare any conflicts of interest or bias. No Commissioner had anything to declare. Chairperson Hoile asked if the public had any challenges to any commissioner's impartiality in making this decision. There were no challenges. Chairperson Hoile asked for the staff report.

Staff Report

PD FarleyCampbell gave some background on the text amendments and how the application came before the Planning Commission. She said that a text amendment enacted by the City Council could be enacted 30 days after approval and that because of the upcoming end of the medical marijuana moratorium; the City Council could decide to add an emergency enactment clause to have those amendments enacted immediately.

PD FarleyCampbell stated that the proposed text amendments would decide distance requirements for medical marijuana facilities from other land uses and establish zones where those facilities could be located. She stated that the definition given by code was the same definition used by the state and listed the zones where it was proposed that those uses could occur.

PD FarleyCampbell stated that the City Council had originally proposed a 500-foot buffer which eliminated many locations where medical marijuana facilities could locate. She said that the City Council desired to have those locations able to site in Florence and directed staff to propose shorter buffers in order to increase the number of viable sites. She stated that the Planning Commission could feel free to recommend different buffers from what they saw. PD FarleyCampbell stated that many of the long lots at the northern end of town would not be fit for facilities because of the need for highway access. She stated that because of this, staff proposed a property line to facility buffer rather than from property line to property line.

PD FarleyCampbell stated that she did not remember who had commented that they would like to see crime and property value information related to medical marijuana facilities. She said that she could not find information related to that because these laws were so new.

Commissioner Murphey asked if the change in the measurement would result in fewer locations possible for a facility. PD FarleyCampbell stated that it would result in a greater number of locations available. Commissioner Muilenburg asked if facilities could be built on those properties which had a buffer on one half and not on the highway-adjacent half. PD FarleyCampbell confirmed that it would allow that.

Chairperson Hoile asked why there was a 1000-foot buffer for schools, but not also parks and libraries because minors also frequent those locations. She said that her concern was not how to provide locations for medical marijuana, but how to protect children from people frequenting those establishments short of disallowing the use city-wide, which would be her preference. PD FarleyCampbell stated that the 1000-foot existing buffer was already very large and disallowed the use in many places and additional larger buffers would not allow the use in any location.

Chairperson Hoile asked why churches were not included as a buffer. She said that many churches provide childcare.

Commissioner Murphey asked PD FarleyCampbell to show the buffers.

PD FarleyCampbell presented the effects of 1000-foot school buffers on properties adjacent to Highway 101. Chairperson Hoile asked what the 1000-foot buffers would do to the Pacific View Business Park. PD

FarleyCampbell stated that she had removed Pacific View Business Park because regular retail was not allowed in that zone.

PD FarleyCampbell presented maps (attached) which showed the effects of different buffer distances on different properties and zoning districts along Highway 101 and in the Professional Office Institutional zoning district.

Staff Recommendation

PD FarleyCampbell stated she had included three more buffers from Highway 126, the Siuslaw River Bridge and the intersection of Highway 101 and Highway 126 that the Planning Commission should feel free to include or remove. She stated that staff recommended the removal of the use from the Limited Industrial and Pacific View Business Park because those zones did not allow retail. She recommended lowering the park buffer to 400 feet and reducing the residential zone buffer to 175 feet.

Public Testimony

Chairperson Hoile asked for any proponents, opponents, or interested neutral parties that would like to speak. There were none.

Chairperson Hoile closed the hearing at 9:59 p.m.

Commission Discussion

Commissioner Murphey stated that he was okay with the change regarding the buffering methodology. He said he would like to see the residential zone buffer be 500 feet, the park buffer be 1000 feet, and the buffer from child care facilities be 1000 feet.

Chairperson Hoile asked if the Dark Sky Lighting should be referenced in the proposed guidelines for medical marijuana facilities. PD FarleyCampbell stated that the district the facility is located in will direct the applicant to the lighting code.

Commissioner Muilenburg stated that he was in disagreement with the other Commissioners and would agree with staff's recommendation. Chairperson Hoile said that she agreed with Commissioner Murphey and would prefer to recommend a greater buffer area and the City Council could change the final code to fit their view of the needs of the community.

Commissioner Murphey stated that he was concerned about the safety of these businesses. He pointed out that banks would not accept large amounts of cash from the operators of medical marijuana businesses because the operation was not legal federally.

Chairperson Hoile asked what happened if a facility located and a school expanded towards the facility and the distance between them was less than 1000 feet. PD FarleyCampbell stated that the marijuana facility would have to move. She added that facilities also were required to be no closer than 1000-feet from each other. Commissioner Muilenburg stated that with the proposed code, there could probably only be a maximum of two facilities.

Chairperson Hoile asked if Commissioner Murphey would be comfortable with a 200-feet buffer from residential districts. He stated that he would be comfortable with a 300-foot buffer. Chairperson Hoile asked if Commissioner Muilenburg would be comfortable with a 300-foot buffer.

Chairperson Hoile asked if Commissioner Muilenburg would be comfortable with a 1000-foot buffer from child care facilities and parks. He stated that he would be comfortable with the facilities locating in the North Commercial district. Commissioner Muilenburg suggested that all the zones permitting medical

marijuana facilities be removed and only North Commercial be kept as a zone permitting the use conditionally. He suggested that the proposed locational requirements be kept.

Commissioner Murphey stated that he could approve of the North Commercial district only with the proposed 300-foot residential district buffer and all of the other buffers, with the exception of those which were no longer needed, the Siuslaw River Bridge, Highway 101-126 Intersection, and Highway 126 buffers, staying as recommended by staff.

Commissioner Murphey motioned approve Resolution PC 14 26 TA 03 with the increase of 10-4-12-I-3a to 300 feet, the elimination of 10-4-12-I-3b, 10-4-12-I-3c, 10-4-12-I-3d, the deletion of all zones except for North Commercial and the inclusion of current lighting code in sections 10-4-12-I-4, Commissioner Muilenburg seconded the motion. By roll call vote: Commissioner Muilenburg "yes"; Commissioner Murphey "yes"; Chairperson Hoile "yes." Commissioners Bare and Burns were absent and excused. The motion passed.

DISCUSSION ITEMS

Commissioner Murphey stated that he would like to thank Chairperson Hoile for her service.

Commissioner Muilenburg asked if the new member would attend their next meeting. PD FarleyCampbell stated that if the interview went well, he would be at the next meeting.

DIRECTOR'S REPORT

PD FarleyCampbell stated that in their next packet there would be a year-end review.

CALENDAR

The Planning Commission discussed the upcoming calendar. The next meeting is scheduled for February 10, 2015 at 7:00 p.m.

Chairperson Hoile adjourned the meeting at 10:24 p.m.

2/20/2015
Cheryl Hoile, Planning Commission Chairperson

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Legal Service Command

300 East Main St., Suite 400
Norfolk, VA 23510-9100
Staff Symbol: (LSC-5E)
Phone: (757) 628-4191

5890
October 29, 2014

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7006 2760 0003 9979 5770

Mr. John C. Robertson
4385 Rhododendron Drive
Florence, OR 67439

Re: Claim for damages
Date of incident: 12/17/2013
USCG File No. 14-LC-0220

Dear Mr. Robertson:

We reviewed your damage claim. Regrettably, the claim is denied pursuant to the Federal Tort Claims Act. (28 U.S.C. §§ 2671-80) and Title 33, Code of Federal Regulations, Part 25.

If you wish to pursue your claim pursuant to the Federal Tort Claims Act, you may commence an action in the appropriate U.S. District Court within six (6) months of the date of this letter. You may also make a written request for reconsideration of this claim. Such a request should include the legal or factual grounds supporting the relief requested, and it should be filed with this office, to the above address, within six (6) months of the date of this letter.

It is our position that the claim is not payable under the Federal Tort Claims Act. We have, however, forwarded your administrative file to the Legal Service Command in Alameda, California for their review as a potential contract matter. Should you have any questions regarding your file, please contact our Alameda office at the below address.

Department of Homeland Security
U.S. Coast Guard
Legal Service Command (LSC-9W)
Coast Guard Island Bldg 54A
Alameda, CA 94501-5100
Phone: (510) 437-3330

Should you have any questions, regarding this letter, please call me at (757) 628-4191.

Sincerely,

N. D. BYERS
U.S. Coast Guard
Claims Division

COLDWELL BANKER

COAST REAL ESTATE

100 Highway 101 Post Office Box C
Florence, OR 97439

Andy Johnson
Owner / Principal Broker

(541) 997-7777 Office
(800) 999-5343 Toll Free
(541) 999-2190 Cell
(541) 997-7159 Fax
andy.johnson@cbcoast.com
www.cbcoast.com

Each Office Is Independently Owned And Operated.

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COAST GUARD CLAIM
14-LC-0220

September 16, 2014

Mr. John C. Robertson
4385 Rhododendron Drive
Florence, OR 97439

Dear John:

After a thorough walk around and walk through last week of your home at 4385 Rhododendron Drive, I observed and confirmed the extensive damage to your home due to the ground disruption from the nearby U.S. Coast Guard pile driving project. I observed sizable cracks in walls, siding, foundation and footings, and deck separation in your late 1990's triple-wide manufactured home.

The damage is severe enough that in my professional opinion (22 years as a local real estate broker), even if repaired per contractor's bids, it will still be a "stigmatized" or "red flag" property with a nearly 20 year old manufactured home on it. In light of the fact that this is a premium ocean and river view lot, the home (even if repaired) will never again be worth close to the price that was paid by Mr. Robertson + the value of the improvements.

I recommend that the home be removed in its entirety and a potentially a stick-built home be constructed in its place, in order to maximize the view element of the land and fully eliminate any possibility of future questions regarding the unsettled manufactured home.

If you have any questions or concerns, please don't hesitate to contact me anytime at 541.997.7777.

Sincerely,

Andy Johnson
Owner/Principal Broker

3/4

MIKE MCALLISTER ENGINEERING
Civil Engineer • Certified Water Right Examiner

11301 E. Mapleton Rd.
Mapleton, Oregon 97453
Phone: (541)-268-4326
Fax: (541)-268-4326

August 19, 2014

Shawn Fleming Construction
Florence, Or.

REPORT ON STRUCTURAL DAMAGES
4385 Rhododendron Drive
Florence, Oregon

The owner of the above noted address has reported possible damage to structures on his property from vibrations. He noticed these vibrations during the time of piling were being driven at nearby Coast Guard Station. He reported this to the Coast Guard. Representatives of the Coast Guard and the project contractor made inspection of his site. He was then told that there was in fact damage due to this vibration, and advised him to get a contractor to provide him with estimates of the cost for repairs as may be required.

You then determined to hire an engineer to make inspection of the structures to determine the damages and make a report on same. You then retained our engineering firm to provide the services required.

Site Inspection

On July 25, August 1, and on August 6, 2014, I inspected the site and structures at the above noted address in Florence, Oregon. The purpose of the inspections was to examine the site and structures for structural damage that may have occurred from the vibration of the nearby pile driving.

The following observations were made:

1) The wood deck on the north side of the mobile home has pulled away from the side of the house and settled downward at the outside supports near the east end of this deck. The separation is about 1 ½" at the most. One end of the beams supporting this deck is supported from the cmu masonry skirting of the mobile home. The footings supporting this deck do not go down into the ground 12" below grade. The displacement of this deck is believed to be the result of recent vibration. Mr. Jack Robertson, owner of the residence, has reported to me that this deck was not displaced before the recent vibration.

2) The soil supporting the deck and mobile home foundation was probed to be soft and was found to be settled near the northeast corner of the house. Three soil anchors were found to have been installed near this corner of the house that support to the concrete foundation of the mobile home. One of these anchors was found to be pulled away from the foundation so that it no longer provides support to the foundation. In some places the soil has settled to be below the bottom of the foundation. This movement of the anchor laterally is likely the result of vibration.

3) Cracking was observed in some of the joints of the 6" cmu masonry skirting of the mobile home at three locations. These cracks appear to be recent in origin, and so are likely the result of vibration.

4) Differential levels were performed to compare the elevation of the top of the 6" cmu skirting at the four main corners of the house. The elevations noted at these corners were the same within 3/16", which shows the foundation has not settled. The lack of cracking of the foundation, other than at some joints at three locations as per no. 3 above, shows the foundation has not differentially settled between corners.

3/4

5) The wood deck along the west side of the mobile home has not pulled away from the home. There might has been some settlement of the footing near the northwest corner of the deck. The soil near this footing was probed and found to be firm. It is unlikely the vibration has caused this settlement. The support system of this west deck has diagonal bracing in both directions which would tend to resist movement from vibration. The support footings under this deck do not go down into the ground to 12" below grade.

6) Dry rot was noted in the west exterior wall of the mobile home near the southwest corner of the house. The siding was removed at this location. The siding is above the window sills is 5/16" Hardiboard in 4' by 8' sheets installed with the long edge vertical, and the siding below the window sills is a type of particle board horizontal lap siding. It is believed dry rot existing before the vibration, but the vibration caused the weakness existing to move and thus accelerate the rot.

7) Several windows in the west exterior walls and one window in the south wall were found to have the seal broken in the double glazing. According to testimony of Mr. Jack Robertson, these windows were in good condition before the vibration. It is my opinion the windows lost their seals from this reported vibration.

8) Separation of vertical joints of the Hardiboard siding has been noted over most of the house and the garage. At the least these joints must be caulked and painted to reseal the siding at the least. As separation has been noted in the vertical jointing there must also be separation for the horizontal joints of both the Hardiboard siding and the horizontal lap siding. The separations noted were wider on the west side of the house. Separation of this type throughout is in my opinion caused by the recent vibration.

9) Cracking in the sheetrock was noted in some walls and along the joint of the ceiling/wall of the living room, the room at the southwest corner of the house. The cracking was not noted before the recent vibration. Weaknesses noted from dry rot in no. 6 would account for the location of this cracking.

10) The floor of the entire mobile home has been affected by the recent vibration. As mobile homes are supported on stacked cmu block and shimmed with wood wedges at these supports, it is necessary for this entire floor system to be re-leveled throughout to take out the slack and adjust accordingly. Also, any steel strap lateral supports installed in the crawl space must be tightened to take up any slack.

Conclusions and Recommendations

The recent vibrations from pile driving at the Coast Guard Station has caused or accelerated damage to this mobile home and garage. Corrections and repairs need to be made soon to prevent further damage to these structures.

The following are recommendations of corrections and repairs that need to be made:

1) For observation no. 1, this deck must be reconstructed and realigned along the side of the house. The support system needs to be reconstructed to provide vertical support without attaching to the 6" cmu skirting and for lateral resistance; and to install new and more footings so that the support will go deeper into the ground.

2) For observation no. 2, the soil anchor that is out of place needs to be forced back under the foundation and then pinned to the foundation. The remaining two anchors also need to be pinned to the foundation. This is normally done with a set bolt or epoxy set bolt. The name of the installer of these anchors is shown on the anchors, and they need to be contacted to perform this pinning and to move the out of place anchor into its proper position.

3) Cracking though the joints as found need to be ground and repointed with appropriate mortar.

4) The wood deck in observation no. 5 needs to have new footings that are installed deeper into the ground.

4/4

5) The siding needs to be removed on approximately 82 l.f. of exterior wall of the south wall of the house beginning at the west end of the south side porch entry, the entire west wall of the house, and the west portion of the north wall from the north side porch to the northwest corner of the house. All rotted or damaged studs need to be repaired or replaced. Then install ½" cdx subsiding from foundation skirting mudsill to underside of the roof overhang above. Felt and rainshield moisture barrier must then be installed over this wall section, and the windows and doors and windows properly flashed and wrapped with approved moisture barrier.
6) Windows with broken seals need to be replaced including the vinyl frames. Proper attentions must to be given to weep holes. Siding must be installed to allow moisture collecting under the siding from condensation to drain out in a downward direction. Windows are to be installed and flashed in accordance with manufacturer's instructions for both window and siding.
7) Re-level the entire floor of the mobile home and secure the wood shims with wood screws. Tighten the metal straps providing lateral support for the floor after the floor is leveled and all wall and window repairs are completed.
8) Repair sheet rock damage as found after all measures above are performed.
9) Caulk and paint all siding of entire house and garage. Painting should include priming as required and two coats of finish paint applied. Paint systems should be approved by the engineer.

Plans have been prepared to cover the above noted recommendations.

REGISTERED PROFESSIONAL ENGINEER
8069
OREGON
MAY 22, 1974
MICHAEL N. McALLISTER
EXPIRES: 12/31/2014

6-6

The necessity of condition surveys for structural protection against pile driving effects

Svinkin, M. R.
Vibraconsult, USA

Keywords: ground, structures, vibrations, condition survey, causes of damage, mitigation

ABSTRACT: Pile driving generates ground and structural vibrations which may detrimentally affect adjacent and remote buildings, houses, people and sensitive devices. Vibration effects on structures depend on numerous factors. Because of uncertainties in the vibration limits available for pile driving operations, condition surveys are very useful for analysis of the causes of the existing damage to structures. Surveys of structures should be performed before, during, and after pile installation. In general, condition surveys can be more important for the safety of structures than calculations of expected ground vibrations and vibration monitoring. Therefore, condition surveys have to be used together with vibration monitoring and control. Mitigation measure should be determined at the time of preconstruction condition surveys of structures.

1 INTRODUCTION

Dynamic effects of pile installation on adjacent and remote structures change in the broad range from devastating structural damage to insignificant vibrations which cannot affect structures. For example, Feld and Carper (1997) reported a case of significant settlements and severe damage to adjacent structures including one 19-story building caused by installation of steel H piles in sand with impact and vibratory hammers, but in contrast Kesner et al. (2006) described successful management of structural vibrations of two historic buildings adjacent to a construction site.

Vibration effects on structures depend on a number of factors such as dynamic sources, the soil medium where waves propagate, soil conditions at location of structures, soil-structure interaction, and susceptibility of structures to vibrations. Also, there are serious problems in vibration protection of sensitive equipment and operations in buildings from pile driving.

Preventive measures for diminishing of vibration effects should be used before the beginning and during pile driving. Calculations of expected ground vibrations prior to pile installation and vibration monitoring during pile driving are implemented for decreasing or elimination of the pile driving effects on structures. The obtained results might be good or bad depending on a number of factors. Independently of measured vibrations and vibration limits, condition surveys performed before, during, and after pile driving operations could be the best indications of structural responses and damage to dynamic excitation from pile installation. It is very important for determining the actual causes of damage to structures.

2 VIBRATION EFFECTS ON STRUCTURES

Impact hammers or vibratory drivers are commonly used for installation of driven piles. Vibratory pile driving mostly affects soil and adjacent structures. Impact pile driving may be the cause of soil deformations and damage to adjacent and remote structures.

The maximum rated energy of the most commonly used impact hammers varies from 5 to 300 kJ/blow. Impact pile driving generates longitudinal pile oscillations and ground vibrations with the dominant frequency in the 7-30 Hz range with predominance at the lower values. The measured maximum pile velocity and displacement values vary per blow from 0.9 to 4.6 m/s and 12 to 35 mm, respectively. Both parameters depend on the pile type, the hammer energy transferred to a pile, and soil resistance to pile penetration (Svinkin 1992).

Vibratory drivers for driving limited displacement piles usually have low to moderate force amplitude and operating frequencies between 20-30 Hz. Displacement piles are driven by vibratory drivers with frequencies of about 10 Hz

and much higher force. The soil resistance to pile penetration and the seismic effect of vibratory driven piles depend on the soil conditions, the pile type and the vibratory driver model.

Dynamic loads force piles to vibrate and penetrate into the ground and trigger elastic waves which propagate in the soil medium and induce elastic soil displacements and vibrations at various levels depending on the intensity of propagated waves. The structural responses to ground vibrations depend on soil-structure interaction. Ground vibrations can produce direct vibration effects on structures and trigger resonant structural vibrations of adjacent and remote structures.

Under certain circumstances related to soil deposit and dynamic movement (vibrations or displacements) elastic waves can be the cause of plastic soil deformations and dynamic settlement. Soil-structure interaction will be different for soil failure. Thus, the structural responses to ground excitation depend on soil deformations triggered by waves propagated from the source and soil-structure interaction (Svinkin 2004, Svinkin 2008).

2.1 Direct vibration effects.

Direct damage to structures occurs as a result of soil-structure interaction when frequencies of ground vibrations do not match natural frequencies of structures. Such damage can be expected within a distance of about one pile length from a driven pile. These distances can be substantially larger for susceptible structures. According to an available experience in the blasting industry (Siskind, 2000), direct minor and major structural damage to 1-2 story residential houses without resonant structural responses are observed in the velocity range of 33-191 mm/s for frequencies of 2 to 5 Hz and in the velocity range of 102-254 mm/s for frequencies from 60 to 450 Hz.

2.2 Resonant structural vibrations

The proximity of the dominant frequency of ground vibrations to one of building's natural frequency can amplify structural vibrations and even generate the condition of resonance. If ground vibrations have only a few cycles with the dominant frequency equal to one of building's natural frequency, resonant vibrations do not develop. The resonant structural vibrations are independent of the structure stiffness being limited only by damping.

Vibratory drivers with various operating frequencies may produce resonant floor vibrations because the natural frequencies of vertical floor vibrations range between 8-30 Hz. These vibrations may affect precise and sensitive devices installed on the floors.

For remote structures, the proximity of the low-frequency components of ground vibrations induced by impact hammers to building's horizontal natural frequencies may generate the condition of resonance in the building and trigger large horizontal vibrations. For one or two-story residential houses, a dynamic magnifying factor at resonance was measured in the limits of 2-9. This factor can be much higher for multi-story buildings. The natural frequencies range from 2 to 12 Hz for horizontal building vibrations and from 12 to 20 Hz for horizontal wall vibrations. There are no readily apparent means for reduction of resonant horizontal building vibrations, but fortunately, these vibrations seldom occur.

2.3 Resonant soil layer vibrations

Matching the dominant frequency of propagated waves to the frequency of a soil layer can create the condition of resonance and generate large soil vibrations. Such amplification of soil vibrations may happen during vibratory pile driving. According to Woods (1997), layers between about 1-5 m thick may produce a potential hazard for increasing vibrations when vibrators with operating frequencies between 20-30 Hz install piles in soils with shear wave velocities between 120 and 600 m/s. The use of vibratory drivers with variable frequency and force amplitude may minimize damage due to accidental augmentation of ground vibrations.

2.4 Dynamic settlement

Different natures of dynamic settlements exist in sand and clay soils. Relatively small ground vibrations can be the cause of dynamic settlement in sand soils. Horizontal ground displacements, not vibrations, can be the cause of heave and following settlement in soft and medium clays (Svinkin 2006).

2.4.1 Soil settlement in sand soil

Pile installation in sand may cause soil and structure settlements due to densification and liquefaction of vulnerable granular soils. Large settlements are usually observed in loose to medium dense sands with relative density less than 70 %. Soil classification and relative density of cohesionless soils can be derived from the results of cone penetration test (CPT).

It is possible to drive piles in sand soils without structural damage to adjacent and remote buildings because sand soils have different responses to dynamic excitations and some sand soils do not develop settlement under dynamic loading. Also, preventive measures can be used against dynamic settlement.

According to Woods (1997), simple methods to estimate settlements in loose to medium dense sand during pile driving do not provide practical solutions. Therefore, the prudent approach is to always

proceed with caution when the condition of settlement is known to exist.

2.4.2 *Soil settlement in clay soil*

Pile installation in clay is different from pile driving in sand. Pile penetration into clay produces an increase in lateral stress and pore pressure and also trigger heave of the ground surface. During pile driving, the excess pore pressure increases with each driven pile and may reach big values at large distances beyond the pile group area. This excess pore pressure can be much larger than the initial effective overburden stress. After the completion of pile driving and the dissipation of the excess pore pressure, the soil reconsolidates and ground surface settles. The soil settlement is usually greater than the heave during pile driving because soil compressibility is significantly increased by soil remolding after pile installation (D'Appolonia 1971).

Movements of adjacent buildings during pile installation can be an important problem if clay susceptible to dynamic loading-induced settlement is present on a construction site. Effects of pile driving in soft to medium clay on the surrounding area should be expected at distances from pile installation equal to about the thickness of the clay layer being penetrated.

2.5 *Additional causes of damage*

It is necessary to take into account the accumulated effect of repeated dynamic loads from production pile driving. This approach is especially important for historic and old buildings.

3 CONDITION SURVEYS OF STRUCTURES

A preconstruction condition survey is the important step in the control of construction vibrations to ensure safety and serviceability of adjacent and remote houses, buildings and facilities. The preconstruction survey should be undertaken after the accomplishment of dewatering and excavation at a construction site and prior to the start of any other activities on the site, including the test pile program. The survey will include all buildings within a radius of about 60 m of the pile driving activities. The distance of 60 m was determined on the basis of analysis of ground vibrations measured at a number of construction sites from pile driving, the existing experience of pile driving effects of structures, and common sense. This distance has to be mostly used for assessment of direct vibration effects on structures. The condition survey should be selectively performed for historic buildings at the area with a radius of 400 m.

The objective of this survey is to determine the condition of structures including the buildings' susceptibility to vibration effects from pile driving, possible dynamic settlement hazard, and vibration background. This survey can detect possible disruption of businesses from pile driving vibrations which includes impact on sensitive equipment and operations, as well as cosmetic cracking and effects on surrounding houses and buildings.

3.1 *Goals of condition surveys*

3.1.1 *Document the existing cracks and other damage*

This survey should include observation and documentation of the existing condition of foundations, exterior and interior walls, ceiling, floors, roof and utilities. Cracks and other damage should be detailed by videotapes and photographs. Notes and sketches should be made to highlight, supplement, or enhance the photographic evidences. It is beneficial to make similar documentation for areas of buildings without damage for future comparisons after the completion of pile driving operations. The condition survey report should summarize the condition of each building and define areas of concern. It is necessary to distinguish different types of cracking in structures as follows: cosmetic cracking, architectural or minor damage, and structural cracking which may resulting in serious weakening of buildings.

3.1.2 *Analyze possible causes of existing damage*

A pre-pile driving condition survey of structures is imperative to determine causation of the exiting damage because environmental forces, geotechnical hazards, and dynamic forces from pile driving can be the causes of similar structural damage which can exist before the beginning of pile driving. Such analysis is important to predict lengthening and widening of old cracks under the vibration effects of construction activities. First of all verification of a dynamic settlement risk should be done because dynamic settlement is the major cause of damage to structures from pile driving. Most settlement cracks have stairs shapes, and they can be easily recognized.

Geotechnical natural danger at various distances from construction sites such as heave, settlement, and sliding may damage structures prior to construction, during and after construction. Environmental stresses may be generated by forces either within the house or outside the house. Some of the larger stresses in the construction materials or the structures are developed by such factors as changes in temperature, changes in moisture, drying and curing of such materials as lumber, plaster, mortar, grout, concrete, brick and other masonry

products, different application of internal heat, aging, and other factors.

3.1.3 *Classify susceptibility rating of structures*

Inspected houses and buildings should be classified into three different categories as a function of building's susceptibility to cracking during pile driving: high, moderate, or low susceptibility (Dowding 1996). Historic buildings usually have high susceptibility rating.

3.1.4 *Determine mitigation measures of pile driving effects on structures*

Reduction measures for decreasing of vibration effects of pile driving depend on soil deformation and soil-structure interaction, and they should be considered before the beginning of pile driving. The separate lists of measures to mitigate direct vibration effects on structures, dynamic settlement in sand soil, and dynamic settlement in clay soils are presented in Svinkin (2006).

3.2 *Condition survey during and after construction*

Condition surveys during pile installation and after the completion of pile driving are significant for analysis of possible causes of damage to structures. Each construction site is unique and even similarity of soil deposits does not mean the same condition of the dynamic settlement development. Physical evidences of damage to structures from dynamic sources are very important. If crack widths increase without increasing of crack lengths, it is not dangerous for structures.

Historic and old buildings require special attention during a preconstruction survey and surveys performed at the time of pile installation and also after the completion of pile driving. Daily inspections should be performed for historic and old buildings.

3.3 *Measurement of background vibrations and sensitive equipment*

As a part of the preconstruction survey, measurement of existing vibration background should be made to obtain information regarding effects of exiting vibration sources. Besides, the presence of sensitive devices and/or operations, such as electronics, medical facilities, optical and computerized systems placed usually on the floors, requires measurement of floor vibrations. For relatively flexible floor systems in buildings, construction vibrations may create conditions for complaints about disturbance and malfunctioning of sensitive equipment. Therefore, it is important to measure floor vibrations from regular occupant motions like footstep force pulses, moving a chair close to the transducer measuring vibration levels, dropping of boxes with computer paper and other footfall events.

Inducing of concrete floor slab movements, footfalls often produce relatively large vertical floor vibrations with the dominant frequency in the range from 5 to 32 Hz, but noticeable levels of peak particle velocity recorded from heavy footfalls may yield unrealistic guidelines regarding permissible values of ambient vibrations for computer systems. However, footfall events constitute a regular environment at rooms for computer systems and a measured vibration background can be at least considered as the survival limit for computer hardware. Sensitive equipment or operations in nearby buildings require measurement of structural vibrations at their locations.

4 CALCULATIONS OF GROUND VIBRATIONS

In practice, two equations are usually used for approximate calculations of the expected peak particle velocity (PPV) of ground vibrations at various distances from driven piles. These equations provide assessment of PPV attenuation between two points on the ground surface. A relationship between pile and ground vibrations is also presented. Besides, two more approaches will be discussed.

4.1 Golitsin's equation

Golitsin's equation takes into account geometric and material damping (Golitsin 1912)

$$A_2 = A_1 \sqrt{r_1 / r_2}\, e^{-\gamma(r_2 - r_1)} \qquad (1)$$

where A_1 = peak particle displacement of vibrations at distance r_1 from source, A_2 = peak particle displacement of vibrations at distance r_2 from source, γ = attenuation coefficient. The term $(r_1/r_2)^{0.5}$ indicates the radiation or geometric damping and the term $\exp[-\gamma(r_2-r_1)]$ indicates the material or hysteretic damping of wave attenuation between two points.

Equation (1) was originally obtained to estimate attenuation of low frequency Rayleigh waves with large wavelengths generated by earthquakes for which the coefficient γ depends very slightly on the properties of upper soil layers. For such conditions, the coefficient γ changes reasonably in narrow limits for assessment of wave attenuation in soils. However, construction and industrial sources generate waves with higher frequencies and smaller wavelengths in comparison with surface waves from earthquakes and these waves propagate mostly in the upper soil strata close to the ground surface.

The coefficient γ is important for accurate calculation of wave attenuation. Collected

experimental data indicate that for the same site and the same dynamic source, soil stratification significantly affects the coefficient γ. Measured data show that for various pairs of widely separated points on the ground surface, values of γ can vary more than an order of magnitude and even change sign. Thus, the coefficient γ acceptable for small distances may be inadequate for long distances. Due to wave reflection and refraction from boundaries of diverse soil layers, an arbitrary arrangement of geophones at a site can yield incoherent results of ground vibration measurements because waveforms measured at arbitrary locations at a site might represent different boundaries of soil layers (Svinkin 2008).

For correct application of Equation (1), it is necessary to use a seismograph array similar to one utilized in seismic analysis of seismic waves (SASW).

4.2 Scaled-distance equation

Wiss (1981) applied the scaled-distance (SD) approach for construction sources and proposed the following equation to calculate attenuation of the peak particle velocity of ground vibrations

$$v = k[D/\sqrt{W_r}]^n \qquad (2)$$

where D = distance from source, W_r = energy of source or rated energy of impact hammer, k = value of velocity at one unit of distance. A distance from the source is normalized (scaled) with the source energy. The attenuation rate represented by the coefficient 'n' is a conventional combination of mostly material damping and partially geometric one. This is a so-called pseudo-attenuation coefficient. The value of 'n' yields a slope of PPV attenuation for all tested soils in the 1-2 narrow range on a log-log chart, and this coefficient is independent of the soil type, the source energy, and the energy level. Coefficient n=1 means lower attenuation of ground vibrations and consequently higher PPV of ground vibrations. Woods (1997) confirmed a soundness of this approach with gathered data from field construction projects and developed a scaled distance chart correlated with ground types. Most of those data correlated with a slope of n=1.5 for Soil Class II and some of the data presented in that study showed n=1.1 for Soil Class III. From Woods (1997), Soil Class II is *Competent Soils* - most sands, sandy clays, silty clays, gravel, silts, weathered rock (can dig with shovel and 5<N<50); Soil Class III is *Hard Soils* – dense compacted sand, dry consolidated clay, consolidated glacial till, some exposed rock (cannot dig with shovel, must use pick to break up and 15<N<50).

Equation (2) provides very rough assessment of ground vibrations as a function of the source energy and a distance from the source. Also, Equation (2) does not take into account the soil conditions, the pile penetration depth, the soil resistance to pile penetration, the soil heterogeneity and uncertainty, the soil-structure interaction, and has nothing to do with structural vibrations, dynamic settlements, and vibration effects on sensitive equipment.

Nevertheless, Equation (2), adjusted for site soil conditions and pile types with field pile testing, provides relatively better results than equation (1) for rough assessment of expected PPV of ground vibrations generated by pile driving.

4.3 New scaled-distance equation

The traditional scaled-distance equation requires the knowledge of a velocity value at some distance from the source for calculating of a ground vibration reduction. The initial velocity is usually unknown. At the same time, the peak particle velocity of pile vibrations can be calculated prior to pile installation.

A new approach in application of a scaled-distance equation for pile driving was presented by Svinkin (2008). The new equation uses the scaled-distance relationship between pile and ground velocities as

$$v_g = a v_p \frac{\sqrt{Wt}}{D} \qquad (3)$$

where a = coefficient related to dimensions, v_p = PPV of pile vibrations at the pile head, v_g = PPV of ground vibrations, Wt = energy transferred to pile that can be determined as the product of rated energy and efficiency. The value of n=1 was chosen to obtain the upper limit of PPV with the lower value of the attenuation rate. The maximum PPV measured at the pile head ranges between 900 and 4600 mm/s.

Values of v_p (mm/s) can be calculated using the following equation

$$v_p = 0.000263\sqrt{2\frac{c}{ZL}W_t} \qquad (4)$$

where c = velocity of wave propagation in pile, Z = ES/c is pile impedance, E = modulus of elasticity of pile material, S = pile cross-sectional area, L = pile length. The coefficients for dimension adjustments were not included in Equations (4) and (5) in Svinkin (2008).

Substitution of Equation (4) into Equation (3) gives

$$v_g = 0.00037\frac{W_t}{D}\sqrt{\frac{c}{ZL}} \qquad (5)$$

Equation (5) provides an opportunity to calculate the PPV of ground vibrations prior to the beginning of pile driving because PPV is a function of known pile parameters. This development of the scaled-distance

approach eliminates the need to know in advance the factor k and increases the accuracy of calculated ground velocity before pile installation. Equation (5) can be adjusted for site soil conditions and pile types with field pile testing similarly to Equation (2)

In contrast to other empirical equations, Equations (3) and (5) can be used to assess ground vibrations from vibratory drivers (Svinkin 2008). Two ways can be used to determine the PPV of vibratory driven piles. First, the PPV of vibratory driven pile is the product of the maximum pile displacement available in the vibrator specification and the angular frequency of pile vibrations. Second, the maximum energy transferred to a vibratory driven pile per a cycle of driving is the product of the maximum power, the period of pile vibrations and the efficiency. Then the PPV of a vibratory driven pile can be computed using Equation (4).

There are two approaches to choose a distance for the SD equation. Horizontal distance is a distance on the ground surface between the driven pile and the seismograph. Seismic or slope distance is a distance from the driven pile tip to the seismograph. Obviously, the use of slope distances yields smaller PPV of ground vibrations. However, actual measured surface ground vibrations at some locations can be larger than calculated PPV for either distance choice. Therefore, it makes sense to use horizontal distances for practical goals to calculate the upper vibration limits.

4.4 Impulse response functions approach

An Impulse Response Function Prediction (IRFP) method was developed for predicting of complete time-domain records on existing soils, buildings, and equipment prior to installation of impact machine foundations (Svinkin 2002). The method is founded on the utilization of the impulse response function (IRF) technique that does not require soil boring, sampling, or testing at the site, eliminates the need to use mathematical models of soil profiles, foundations and structures in practical application, and provides the flexibility of implicitly considering the heterogeneity and variety of soil and structure properties. There are no assumptions about soil conditions and structural properties. As it was shown by Svinkin (1996), this method can be used to predict ground and structure vibrations from construction sources such as impact pile driving. Wave equation analysis was used to assign a pile movement, but it necessary to underline that the pile movement can be assigned arbitrarily, for example as a damped sinusoid, because ground vibrations at some distance from a dynamic source depend only on the dynamic force transmitted onto the ground and soil properties (Svinkin 2002).

The following is a general outline of the IRFP method for prediction of complete vibration records of soil and structures prior to installation of a dynamic source. 1. At the place chosen for impact dynamic source, impulse loads of known magnitude, which should be not smaller than 10 times less of the dynamic load of the source, are applied on the ground. 2. At the moment of impact on the ground, vibrations are recorded at the points of interest, for example, at the locations of instruments and devices sensitive to vibrations. These oscillations are impulse response functions of the considered dynamic system which automatically take into account complicated soil conditions and soil-structure interaction. 3. Calculation of convolution integrals of impulse response functions and dynamic loads transferred onto the ground to obtain the complete records of soil and structure vibrations. The predicted soil vibrations demonstrate a close fit to the measured data.

It is common that the high resistance of upper soil layers at depth about 10 m below the ground surface affects intensity of ground vibrations. The high soil resistance with deeper pile penetration into the ground much slightly affects surface ground vibrations. Therefore, it makes sense to use the IRFP method at sites with stiff upper soil layers and buildings containing sensitive equipment.

4.5 Pile capacity and ground vibrations

Some authors, for example Hajduk and Adams (2008), found that ground vibrations can be correlated with pile capacity determined during pile driving, and they believe that pile-soil interaction, not energy, is the major influence in the generation of ground vibrations from driven piles. Obtained conclusions are not accurate because ground vibrations and pile capacity are outcomes of the same pile driving process and only an accidental correlation between them is possible.

Some comments are necessary. First, during pile driving, the static pile capacity is determined by signal matching software on the basis of force and velocity measurements at the pile head. Unfortunately, different software produces different results. Second, obviously, the effect of pile-soil interaction on ground vibrations and pile capacity depend on the hammer energy. There is a typical statement in a number of papers that pile capacity was not mobilized because of the low hammer energy. Third, during pile installation, ground vibrations should be measured not calculated because possible detrimental effects of pile driving operations predetermine the necessity of ground vibration measurements. Fourth, measured ground vibrations are more reliable than calculated ones.

example, toward blasting ground-borne vibrations, there is the 1-300 Hz frequency range and 0.2-500 mm/s (0.008-20 in/s) velocity range; toward pile driving ground-borne vibrations, there is the 1-100 Hz frequency range and 0.2-50 mm/s (0.008-2 in/s) velocity range. It is necessary to point out that the upper velocity limit of structural vibrations from pile driving is underestimated because structural vibrations with PPV of 50 mm/s (2 in/s) cannot usually damage structures. Nevertheless, a procedure available in the Standard can be used for evaluation of any measured structural vibrations generated by pile driving.

Obviously, ANSI S2.2.47-1990 is not used in the construction industry because of involvement of structural dynamics in measurement of structural vibrations and assessment of vibration effects on structures, but in complicated situations, this Standard should be used for evaluation of pile installation effects on adjacent and remote structures.

5.3 *Russian criteria*

The Russian limits of 30-50 mm/s (1.18-1.97 in/s) for vibrations of sound structures were found by the Moscow Institute of Physics of the Earth to assess the safety of structures from explosive effects of various blasts in the air, on the ground, and under the ground at the time of the Second World War (Sadovskii 1946). These vibration limits well work for building vibrations exited by different dynamic sources. It is necessary to perform direct measurement of structural vibrations accompanied by observation of the results of dynamic effects. Thus, for multi-story residential, commercial and industrial buildings, the frequency-independent safe limit of 51 mm/s (2 in/s) can be chosen for PPV of structural, not ground, vibrations. Under the condition of elastic soil deformations, this criterion automatically takes into account soil-structure interaction for the whole building frequency range. In the support of this criterion, it is necessary to underline that according to the USBM study, the PPV of 51 mm/s (2 in/s) is the highest vibration level generated inside houses by walking, jumping, slamming doors, etc. (Siskind 2000). Besides, this vibration limit is compatible with the European Standards, and it does not exclude higher allowable vibration levels (Svinkin 2008).

It is easy to demonstrate compatibility of this simplified safe criterion with some existing regulations such as the USBM and OSM vibration criteria (Figure 1). To evaluate tolerable structural vibrations, the smallest vibration limits of 13 mm/s (0.5 in/s) and 19 mm/s (0.75 in/s) from the USBM vibration criteria have to be multiplied by 4.5 (the maximum amplification of ground vibrations by structures used in these regulations), and their products of 57 mm/s (2.25 in/s) and 85.5 mm/s (3.37 in/s) are higher than the simplified criterion of 51 mm/s (2 in/s), Figure 1. It is important that the limit of 51 mm/s (2 in/s) for structural vibrations can be applied for assessment of vibration effects on 1-2 story houses as well.

5.4 *Criteria for dynamic settlement*

There are no regulations of the critical levels of ground vibrations which may trigger dynamic settlements beyond the densification zone. However, there are a few publications with information about the vibration levels of ground vibrations which may trigger dynamic settlements. Dowding (1996) used the limit of 2 mm/s (0.08 in/s) to determine a distance for preconstruction survey. Lacy and Gould (1985) analyzed 19 cases of settlements from piles driven by mostly impact hammers in narrowly-graded, single-sized clean sands with relative density less than about 50 to 55 %. They found that the peak particle velocity of 2.5 mm/s (0.1 in/s) could be considered as the threshold of possible significant settlements at vulnerable sites. Clough and Chameau (1980) revealed that acceleration higher than 0.05 g can trigger dynamic settlement in loose sands with rubble and broken rock. This criterion is adequate to the peak particle velocity of 4.3 mm/s (0.17 in/s) for the frequency of 18 Hz of ground vibrations from the vibratory driver.

5.5 *Criteria for structures with sensitive equipment*

Vibration limits for sensitive equipment and operation should be received from manufacturers. For example, Grose and Kaye (1986) obtained data from the computer manufacturer regarding the acceptable intensity of floor vibrations for installation of almost 400 driven piles on a site bounded by two vibration sensitive structures.

Boyle (1990) accumulated information from computer manufacturers such as IBM, ICL, Hewlett Packard and NCR which determined the following tolerable vibrations of mainframe disk drives. Constant amplitude vibration limits over the frequency range of 5 to 500 Hz: functional limits are between 0.2 g and 0.25 g and survival limits can be 0.5 g. Impact vibration limits: functional limits for the impact with maximum 11 ms duration are about 3 g. This value is commented as a slightly conservative estimate because disk drives have still functioned at vibration levels up to 4 g at the ground under earthquake simulation tests.

5.6 *Comparison of measured PPV with vibration limits*

It is common to compare the maximum single PPV of three components of measured ground vibrations

with the vibration limits. Sometimes, the instantaneous vector sum is used. However, consideration of such a vector makes sense when the frequency contents of three components are the same, but it happens very seldom.

6 VIBRATION MEASUREMENTS AND CONDITION SURVEYS OF STRUCTURES

It is common to calculate and measure ground vibrations from pile driving for assessment of vibration effects on structures and compare them with the USBM vibration limits. However, these criteria were developed for protection of 1-2 story houses from surface coal mining blasts, and these criteria have nothing to do with ground and structural vibrations generated by pile driving. There is no legal basis to use these vibration limits for evaluation of pile driving effects on structures. As it was mentioned before, the application of the USBM limits to markedly different types of structures is common and inaccurate.

Approximate calculation of expected ground vibrations and even vibration monitoring yield relative information on vibration effects on structures, and these results could be inconclusive. Moreover. there is uncertainty in application of the existing vibration limits for assessment of pile driving effects on soils and structures. Therefore, it is necessary to perform condition surveys of structures before, during and after pile installation which provide complete information on structural responses to vibration excitations. Obtained information can be much beneficial than vibration assessment and measurements for analysis of causes of damage to structures.

It is reasonable to use the results of condition surveys to judge vibration contributions to structural damage. The following are three examples from a writer experience.

First case history (California). Dynamic compaction was conducted near the existing residential houses built on peat. All houses and their driveways had previous damage from peat deformations. It was difficult to determine what additional damage was done by dynamic compaction. Nevertheless, one home owner completely repaired his house and driveway before the beginning of dynamic compaction, and a preconstruction condition survey was made for this house. Therefore, new damage to this house triggered by dynamic compaction was easily recognized.

Second case history (Vermont). Blasting and pile driving were conducted at distances of 9-15 m (30-50 ft) from one story administrative building which received serious damage. The results of vibration measurements were inconclusive. Due to condition surveys performed before, during, and after construction, it was found that a geotechnical hazard, slow slope sliding, was the cause of damage to the building. Blasting and pile driving did not produce damage to that building.

Third case history (Michigan). Vibratory and impact sheet pile driving made damage to a new two story house. The vibration limit of 5 mm/s (0.2 in/s) was used. However, such decreasing of the vibration limit in a comparison with the USBM criteria did not prevent vibration damage to the house. A settlement crack was found in the brick chimney and vibratory sheet pile driving with the frequency about 26 Hz triggered resonant vertical floor vibrations which made architectural damage to the house. Then a vibratory driver was replaced with an impact hammer which completely destroyed a driveway of the house. Conditions surveys of this house were performed before, during, and after construction.

One more representation from Kesner et al. (2006) who successfully controlled vibrations of two historic buildings from construction activities with daily condition surveys of building structures.

It is important in the preconstruction survey to check the stability of the soils surrounding the pile driving site. Densification of loose material and slope movement can occur during pile driving vibrations, and this possibility must be considered when establishing of the control limits for ground motions. At sites with possible dynamic settlement, the distance for preconstruction survey shall be increased.

There is the criterion of 60 m which could be good for a number of sites but not for all of them. For example, there is an interesting case with building settlement developed at a distance of about 305 m (1000 ft) away from a pile driving site, Kaminetzky (1991). Foundations of the buildings were underpinned on piles down to the tip elevation of the new driven piles to prevent building settlements. Possible dynamic settlement was not detected at the time of a preconstruction survey because condition surveys at such large distances are unpractical and will mostly waste time and money. However, the pile driving contractor immediately responded to the sign of dynamic settlement and prevented building damage. The prudent approach is to always proceed with caution when the condition of settlement is known to exist. The contractor must provide a fast response to complaint on structural damage due to vibrations from pile driving.

There are a considerable diversity of buildings and their structures. For instance, floors, external and internal walls, roofs, etc., have different responses to the same ground vibrations. Besides, subjects of concerns are structure contents such as computerized systems, instrument cabinets, medical apparatuses and other sensitive devices in office buildings and glass and china in residential houses that also have their own responses to ground

vibrations. It is imperative to measure structural vibrations for correct assessment of vibration effects on structures in accordance with Standard ANSI S2.47-1990 which is the U.S. counterpart of the International Standard ISO 4866-1990.

It is important to underline that only measurement of floor vibrations at locations with sensitive equipment and their comparison with vibration limits can prevent damage to such equipment. Grose and Kaye (1986) described installation of hundreds piles in close proximity to two vibration sensitive structures with the main-frame computer. During pile testing, pile driving parameters were adjusted to keep floor vibrations measured near the computer below the vibration limits allowable for the computer.

7 CONCLUSIONS

Approximate calculations of expected ground vibrations and even vibration monitoring yield relative information about vibration effects on structures, and these results could be inconclusive. Moreover, there is uncertainty in application of the existing vibration limits for assessment of pile driving effects on soils and structures. At the same time, condition surveys of structures before, during, and after pile installation provide complete information on structural responses and damage from vibration excitations and these acquired facts can be much beneficial for analysis of the causes of damage to structures than vibration assessment and measurements. Therefore, condition surveys have to be used together with vibration monitoring and control.

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PERILS INSURED AGAINST WITH LIMITATIONS
Coverage D – Loss of Use

"We" insure against risk of "loss" described in Coverage D only if that "loss" is the result of "loss" to the property caused by a peril that applies to the insured property and is not excluded in Perils Insured Against, Coverage A – Dwelling or under Section I – Exclusions.

SECTION I - DEDUCTIBLE

"We" will subtract the deductible shown on the Declarations from each "loss."

SECTION I - EXCLUSIONS

1. "We" do not insure for "loss" caused directly or indirectly by any of the following:

   a. **Ordinance or Law** meaning enforcement of any ordinance or law, except as provided in Additional Coverage 10:
      (1) That requires or regulates the construction, demolition, remodeling, renovation or repair of property, including removal of any resulting debris;
      (2) That results in a "loss" of value to property; or
      (3) That requires "you" or others to test for, monitor, clean up, remove, contain, treat, detoxify or neutralize, in any way respond to, or assess the effects of "pollutants";

      Exclusion 1.a. does not apply to the replacement of glass with safety glazing material when required by ordinance or law.

      Exclusion 1.a. applies whether or not the property has been physically damaged.

   b. **Earth Movement** which means earthquake, including land shock waves or tremors before, during or after a volcanic eruption, landslide, mudflow, earth sinking, rising or shifting, including those caused by human forces or acts of nature;

      If direct "loss" by:
      (1) Fire;
      (2) Explosion;
      (3) Breakage of glass or safety glazing material which is part of a building, storm door or storm window; or
      (4) Theft ensues;

      "We" will pay only for these ensuing "losses."

   c. **Water Damage** which means:
      (1) Flood, surface water, waves, tidal waves or water including storm surge, tsunami, overflow of a body of water, or spray from any of these, whether or not driven by wind, regardless of the cause, either natural or man made;
      (2) Water or waterborne material which backs up through sewers or drains or that overflows from a sump; or
      (3) Water or waterborne material below the surface of the ground, including water that exerts pressure on or seeps or leaks through a building, sidewalk, driveway, foundation, swimming pool or other structure;

      "We" cover direct "loss" by fire, explosion or theft resulting from water damage.

Glen Southerland

From: TEMPLIN Steve <Steve.TEMPLIN@odot.state.or.us>
Sent: Monday, January 26, 2015 3:15 PM
To: Glen Southerland
Cc: LANGE Jeffrey R; STENNETT Michael J * Mike; BRINDLE Frances * Frannie; Wendy Farley-Campbell; LITTLE Richard * Rick
Subject: RE: Florence Planning Commission Meeting (January 27, Siuslaw Drawbridge)

Glen, it's hard to guess what the contractor will want to do, but there is going to be noise at night. I would suspect it will not be worse that what we had in 2010/2011 with rivet busting and sand blasting. I don't know exactly what equipment they will be using. We need to have it as open as possible, ideally mirroring our contract language which gives us the ability to manage it within reason.

We need to understand noise complaints are going to be inevitable when you are working around a hotel and other sparsely populated areas. We will do our best and work with the contractor with our concerns – but we need to balance that with the work load. I would respectfully request that the language in your permit be made to mirror our contract language with ODOTs commitment that we will work with you on an ongoing basis throughout the contract.

Steve

Steve Templin, P.E.
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From: Glen Southerland [mailto:glen.southerland@ci.florence.or.us]
Sent: Monday, January 26, 2015 1:01 PM
To: TEMPLIN Steve
Cc: LANGE Jeffrey R; STENNETT Michael J * Mike; BRINDLE Frances * Frannie; Wendy Farley-Campbell
Subject: RE: Florence Planning Commission Meeting (January 27, Siuslaw Drawbridge)

Hello Steve,

I apologize for not responding last week to your email, I was out of the office until today. I have responded below to your concerns in red.

Did you have any other concerns about the conditions, etc.? Please let me know if you have any questions.

Thank you,
Glen Southerland
Assistant Planner
City of Florence Planning Department
www.ci.florence.or.us
250 Highway 101

EXHIBIT L

Florence, OR 97439
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From: TEMPLIN Steve [mailto:Steve.TEMPLIN@odot.state.or.us]
Sent: Thursday, January 22, 2015 2:02 PM
To: Glen Southerland
Cc: LANGE Jeffrey R; STENNETT Michael J * Mike; BRINDLE Frances * Frannie
Subject: FW: Florence Planning Commission Meeting (January 27, Siuslaw Drawbridge)
Importance: High

Glen,

How's it going. As you remember, I'm construction rep responsible for administering the construction contract with the successful bidder. On this project they have cut things close – we open bids next Thursday just a couple days after the planning commission meeting.

When looking through the memo PC1422CUP09 I am seeing a few things that do not line up very closely with our contract language – some of those things I can probably deal with during construction; others are a large deviation from what we have told contractors thus far. Here is the list.

ITEM 3
"...the authorization of the conditional use permit shall be approved for a period of one year after the date of approval...unless construction has been completed."

> This I'm just confused about – our contract does not specify when the contractor has to start nor the staging or direction that they have to start from - there is some language about completion of the work within flounce city limits (about the middle of the channel) as follows:

(1) Complete all Work to be done under the Contract that requires the use of any land, sea, ocean, river or body of water within the Florence city limits or north of the main navigation channel in the Siuslaw River, including but not limited to staging areas, work
bridges, and ground-supported containment (excluding containments entirely supported by the bridge, work above the bridge deck, bridge rail work, and installation of electrical wiring, conduit, and equipment), before the elapse of 450 days.

> I have been told that the length of time of impact to the City is the reason behind this, that the "clock" starts when they start work on the north half and ends within 450 days. **I don't know if we have an issue or not – please advise.**

The main issue with the one-year approval period is that City Code does not allow approval periods longer than one year. In order to attempt to accommodate ODOT and your contractor for this project, I have defined the "substantial construction" as the award of a bid. This means that ODOT would have until January 27, 2016 to select a bid or start driving piles. Typically, and as it is defined in Code, "substantial construction" is the completion of a building foundation. At the point where normally a building foundation would be poured, a Conditional Use Permit can no longer expire (until the use is discontinued). Since there is no building foundation, we selected to use the award of bid or pile driving as the point where the approval period is no longer needed. If a winning bid is not selected and the year passes, ODOT would need to apply for an extension of that approval period (up to one-year maximum) or reapply. After a winning bid is selected, it will not matter at what point the north work begins.

In short, this is only to address our Code and not your project, and based on the bid timeline I have been provided with, should not pose an issue.

ITEM 5.1

There is no way in our contract that the contractor would be able to extend their platforms over an existing building – however they platforms could be (but unlikely) above (in height) that an adjacent building . How it is written is confusing or could be interpreted either way; **Do we have an issue – please advise.**

I do not believe this should pose an issue. Jeff was correct in assuming that the meaning was above, literally, rather than "taller than." I have been told by Rick and Jeff that the work will be contained within the right-of-way. The concern was with buildings adjacent to the bridge that may be affected. If platforms were needed over the roofline of these buildings, in which case work would also be outside of the right-of-way, ODOT would just need to obtain the property owner's permission and have the proximity and construction reviewed for safety by the Building Official and the Fire Marshal. This should not pose a major issue.

ITEM 5.2

Access is not an issue and screening, although not currently included can be added by change order to the construction contract if desired – but it will still look like a construction area because a lot of the equipment will be above the roadway level. Fencing makes limited access even more limited because it gives another vertical barrier to work within. Given the limited access it is likely that the fenced area could extend within the ODOT row out onto Bay Street - not sure if that'll impact a few parking spaces but I wanted to bring that up .

Yes, this has been our understanding, but thank you. The screening was the only thing from that condition that had not been specified by ODOT, but the fencing would likely be of interest to the winning bidder.

ITEM 6.2

This is the BIGGEST issue I have I want to you are aware of before this permit is finalized – misunderstanding and any changes to the construction contract could result in HUGE impacts to the construction costs and schedule – which would make achieving an already long project drag out even longer. The following noise restrictions are included in the contract:

00290.32 Noise Control - Comply with ORS 467, OAR 340-035, all other applicable Laws, and the following construction noise abatement measures:
• Do not perform construction within 1,000 feet of an occupied dwelling on Sundays, legal holidays, or between the hours of 10:00 p.m. and 6:00 a.m. on other days, without the approval of the Engineer.
• Use equipment with sound control devices no less effective than those provided on the original equipment. Equipment with un-muffled exhausts is prohibited.
• Use equipment complying with pertinent equipment noise standards of the EPA.
• Do not drive piling or perform blasting operations within 3,000 feet of an occupied dwelling on Sundays, legal holidays, or between the hours of 8:00 p.m. and 8:00 a.m. on other days, without the approval of the Engineer.
• Mitigate the noise from rock crushing or screening operations performed within 3,000 feet of all occupied dwellings by placing material stockpiles between the operation and the affected dwellings, or by other means approved by the Engineer.

Pile driving is no problem – it will happen during the daylight hours. My concern is with the actual coating process – it is a two part process where time is an issue – It starts with preparing the concrete with sandblasting; second they spraying a hot zinc coating on the concrete. The two processes cannot take place at the same time because all of the sand has to be cleaned up and the air cleaned before they spray – or the zinc will not stick to the concrete. Plus they only have a limited time to spray the zinc because moisture is an issue. So how this

always works is they will have shifts. The first shift they will sandblast and clean up about what they can get done in 8-10 hours; the second shift they come in and spray zinc. Both processes are noisy, you can assume what sandblasting is going to sound like – compressed air, etc. The zinc is equally as loud with generators and blowers that put on the zinc.

So – any nighttime noise restrictions are going to make it impossible or MUCH more expensive to build The specs above from are from our standards and we have already told people that night work will be allowed.

I will bring this up to the Planning Commission and see if they are willing to make that accommodation (specifically the hours) in the conditions. I will check into the issue with your noise variance as well and respond. I believe that my wording of the condition, knowing that night work would be occurring (though I did not know that it would be a regular occurrence), would just be that the applicant would make attempts to reduce the impacts of noise, odors, and vibration during night hours, but not that the work would be prohibited. Once the structure is enclosed, do you know what the noise level would be from the described sandblasting and coating? My understanding was that the noise from these processes would be reduced by the enclosed structure.

Glen, I will plan to come to the meeting with Jeff next Tuesday so I can do my best to explain the situation to you and the commission – I am buried tomorrow but maybe Monday you could call me and we could discuss before the meeting.

Steve Templin, P.E.
Interim Project Manager
Oregon Department of Transportation
Region 2 - Area 5 - Springfield
644 A Street
Springfield, OR 97477
Office: (541) 744-8080
Direct: (541) 744-8076
Cell: (541) 968-6492
Email: steve.templin@odot.state.or.us

Coast Guard Rip Rap Extension

PC 14 24 EAP 02

Criteria

Florence City Code, Title 10:

Chapter 1: Zoning Administration, Section 1-5

Chapter 4: Conditional Uses, Section 8

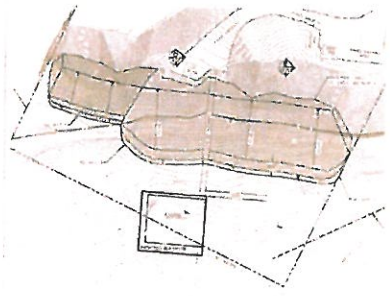
Introduction

- **October 2013** – Original application received
- **January 14, 2014** – Planning Commission approved application
- **November 13, 2014** – Application for Extension of Approval Period received

Site Location

Approved Site

Approved Site



Testimony

- Referral comments were submitted by:
  - Chief Lynn Lamm, Florence Police Department
- No public testimony received

Staff Recommendation

Staff finds that the application meets the requirements of City Code with the following conditions, and recommends approval of the extension of approval period subject to those conditions.

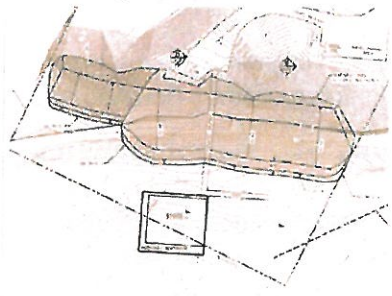
Conditions of Approval

3. Applicant shall abide by the conditions of the previous approval, PC 13 09 CUP 03
4. New deadline is January 27, 2016

Alternatives

1. Approve application;
2. Modify the findings, reasons, or conditions and approve the proposal;
3. Deny the application based on the Commission's findings; or,
4. Continue the Public Hearing to a date certain if more information is needed.

Questions?



Munsel Lake Village Extension

PC 14 25 EAP 03

Criteria

Florence City Code, Title 10:

Chapter 1: Zoning Administration, Section 1-5

Chapter 4: Conditional Uses, Section 8

Chapter 6: Design Review, Section 9

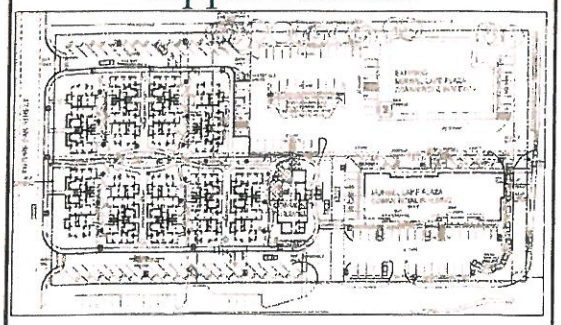
Chapter 23: Planned Unit Developments, Section 14

Introduction

- **2007** – Original application received
- **November 25, 2008**– Planning Commission approved application
- **January 4, 2010** – Special extension by City Council
- **December 1, 2014** – Application for extension received
- **December 17, 2014** – Expiration of six year period

Location

Approved Site



Testimony

- Referral comments were submitted by:
  - Chief Lynn Lamm, Florence Police Department
  - Robin Hicks, Central Lincoln PUD
- No public testimony received

Staff Recommendation

Staff finds that the application meets the requirements of City Code with the following conditions, and recommends approval of the extension of approval period subject to those conditions.

Conditions of Approval

3. Applicant shall abide by the conditions of the previous approvals, PC 08 26 PUD 02, PC 08 CUP 05, PC 08 39 DR 13, and Ordinance No. 1, Series 2010
4. New deadline is January 27, 2016 for Design Review and CUP. July 27, 2016 for PUD approval.

Alternatives

1. Approve application;
2. Modify the findings, reasons, or conditions and approve the proposal;
3. Deny the application based on the Commission's findings; or,
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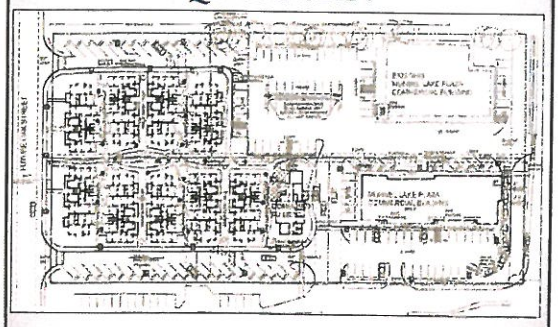
Questions?



Siuslaw River Bridge Work Platforms

PC 14 22 CUP 09

Criteria

Florence City Code, Title 10:
Chapter 1: Zoning Administration, Section 1-5
Chapter 2: General Zoning Provisions, Section 12
Chapter 4: Conditional Uses, Sections 5 thru 8, 10, and 11
Chapter 17: Old Town District, Section A-2
Chapter 19: Estuary & Shorelands, Sections 4 and 7

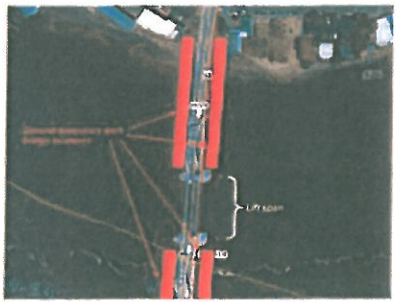
Florence Realization 2020 Comprehensive Plan:
Chapter 5: Open Spaces and Scenic, Historic, and Natural Resources
Chapter 6: Air, Water and Land Quality
Chapter 12: Transportation
Chapter 16: Siuslaw River Estuarine Resources
Chapter 17: Coastal Shorelands: Ocean, Estuary, and Lake Shorelands

Introduction

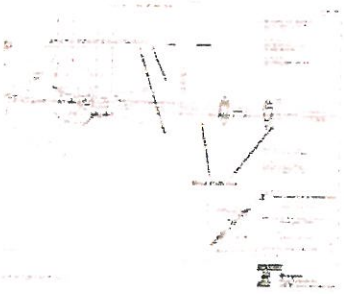
- **1936** – Siuslaw River Bridge completed
- **2010** – Upgrade of mech./elec. for drawbridge
- **October 16, 2014** – ODOT applied for CUP
- **January 2015** – Award of ODOT bid
- **2015 – 2019** – Repair work scheduled for Siuslaw River Bridge

Aerial of Site

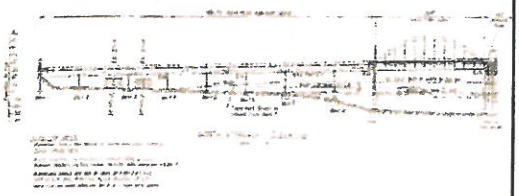
Proposed Site



Proposed Site

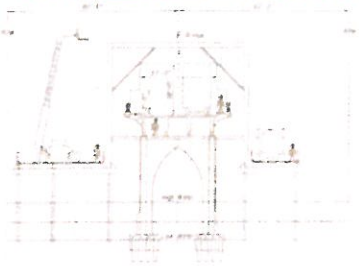


Elevation



Work Platform

Work Platform w/ Containment Structure



Eelgrass Beds

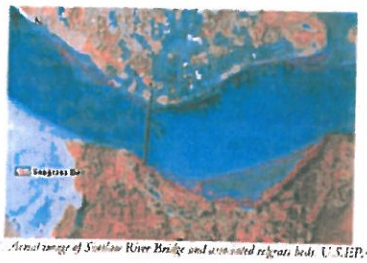


Figure H: Aerial image of Siuslaw River Bridge and annotated eelgrass beds. U.S.EPA 2007.

Testimony

- Referral comments were submitted by:
  - Jason Kirchner, Oregon Dept. of Fish & Wildlife (Exhibit G1 and G2)
  - Chief Lynn Lamm, Florence Police Department (Exhibit H)
- No public testimony received

Staff Recommendation

Staff finds that the application meets the requirements of City Code with the following conditions, and recommends approval of the conditional use permit subject to those conditions.

Conditions of Approval

3. Substantial construction definition and deadline of January 27, 2016.
4. Removal of pilings. Deadline for removal of 6 years. "Use" is the work platforms.
5. Work contained in ROW. Screening of staging area. Flagger to ensure safe passage of equipment/materials onto Bay Street.
6. Noise, vibration, odors, unsightliness. Regulation of hours. Regulation of in-water work period.

Conditions of Approval

7. Vegetation removal & replacement. Replanting and seeding. Protection of eelgrass beds. Open sand management.
8. Mitigation. Sound attenuation reduction measures.
9. No pollution entering the river. Integrity of bank. Stabilization through planting and seeding. Refueling at least 150 feet away from project site. Containment systems on barges.

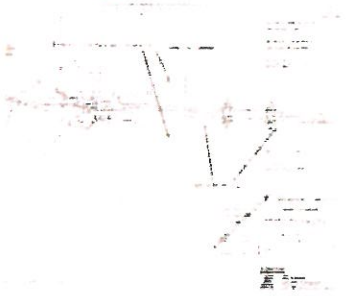
Conditions of Approval

10. Meet conditions of approval from DSL Permit No. 56869-GP.
11. Grated deck covering time limit. Shading of eelgrass beds minimized. Sedimentation of eelgrass beds prohibited. Containment structures shading eelgrass beds dismantled as soon as possible.
12. ODOT responsible for actions of contractors.
13. Immediate notification of CTCLUSI Cultural Resources Protection Specialist if archaeological resources are found.

Alternatives

1. Approve application;
2. Modify the findings, reasons, or conditions and approve the proposal;
3. Deny the application based on the Commission's findings; or,
4. Continue the Public Hearing to a date certain if more information is needed.

Questions?



Medical Marijuana Facility Policy Proposal

PC 14 26 TA 03

Planning Commission Hearing

January 27, 2015

Implementation Process

- **City Council:** Action Item-October 20th
  - Initiated code updates
- **Planning Commission:** Hearing-January 13th
  - Continued to January 27th
  - Recommendation to City Council
- **City Council:** Public Hearing-February 2nd
  - Final decision to take effect March 5th

Applicable Criteria

Florence City Code (FCC) Title 10: Zoning Regulations

- Chapter 1, Zoning Administration, Section 1-3-C Legislative Changes

Florence Realization 2020 Comprehensive Plan

- Chapter 1: Citizen Involvement: Policies 4, 5, & 6
- Chapter 2: Land Use, Policies 1 & 3, Industrial, Policy 4
- Chapter 9: Economic Development, Policy 1

Code Amendment Summary

- Definition for medical marijuana facility
- Design & locational standards
- Zones where permitted

Proposed Amendments

- Title 10 Chapter 1: Definitions
  - *"Medical Marijuana Facility"*
- Title 10 Chapters: 15, 16, 25, 27 & 30:
  - Permit MMFs conditionally
- Title 10 Chapter 4: Conditional Use, Additional Conditions
  - Pre-Development Meeting
  - State & City Business Licenses

Proposed Amendments

- Title 10 Chapter 4: Conditional Use, Additional Conditions *(continued)*
  - Not a home occupation
  - Permanent structure & no other use within the same building
  - No drive-up or walk-up
  - One public entrance facing a public street
  - Lighting--entry and parking

Proposed Amendments

- Title 10 Chapter 4: Conditional Use, Additional Conditions *(continued)*
  - *Separation from other districts, uses, and geographical ref.*
    - 175' residential zones (500')
    - 200' Hwy 126 (new)
    - 200' intersection of Highway 101 & 126 (new)
    - 400' public parks (500')
    - 500' Siuslaw Bridge (new)
    - 500' public libraries & child care homes and centers
    - 1000' public and private schools attended

Since January 13, 2015....

- Updated Resolution with:
  - 10-4 Buffer methodology (from structure)
- New Maps for illustrative purposes
- No published studies on known or projected property value impacts.
  - Building degradation
  - Building code violations

Questions?

City of Florence

Allowed Zones for Medical Marijuana Facilities

Properties with appropriate zoning and
a. Distance of 175 feet from residential zones
b. Distance of 200 feet from Hwy 126
c. Distance of 200 feet from intersection of Hwy 101 & Hwy 126
d. Distance of 500 feet from Siuslaw Bridge
e. Distance of 500 feet from public libraries
f. Distance of 400 feet from public parks
g. Distance of 500 feet from child care facilities licensed by the regon Department of Education (registered family child care homes, certified family child care homes, and certified child care centers).
h. 1000 feet from public or private elementary, secondary or career school attended primarily by minors.

- Florence City Limits
- Florence UGB
- ChildCareFacilities
- Schools
- Parks
- TaxLots- April 2014

Buffers

- Tax Lots conforming 175ft res zoning
- Tax Lots conforming 300ft res zoning
- Tax Lots conforming 500ft res zoning
- 200 ft Hwy 101, Hwy 126
- 175 residential zones
- 300 residential zones
- 500 residential zones
- 200 ft Hwy 126
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- 500 ft Library
- 400 ft Parks
- 500 ft Child Care
- 1,000 ft Schools

Zoning

Commercial
- Main Street Area A
- Main Street Area B
- North Commercial
- Commercial
- Highway

Mixed Use
- Professional Office

Industrial
- Pacific View Business Park
- Limited Industrial
- Service Industrial

Legend

City of Florence
250 Hwy 101 N.
Florence, OR 97439
(541) 997-3437

January 23, 2015

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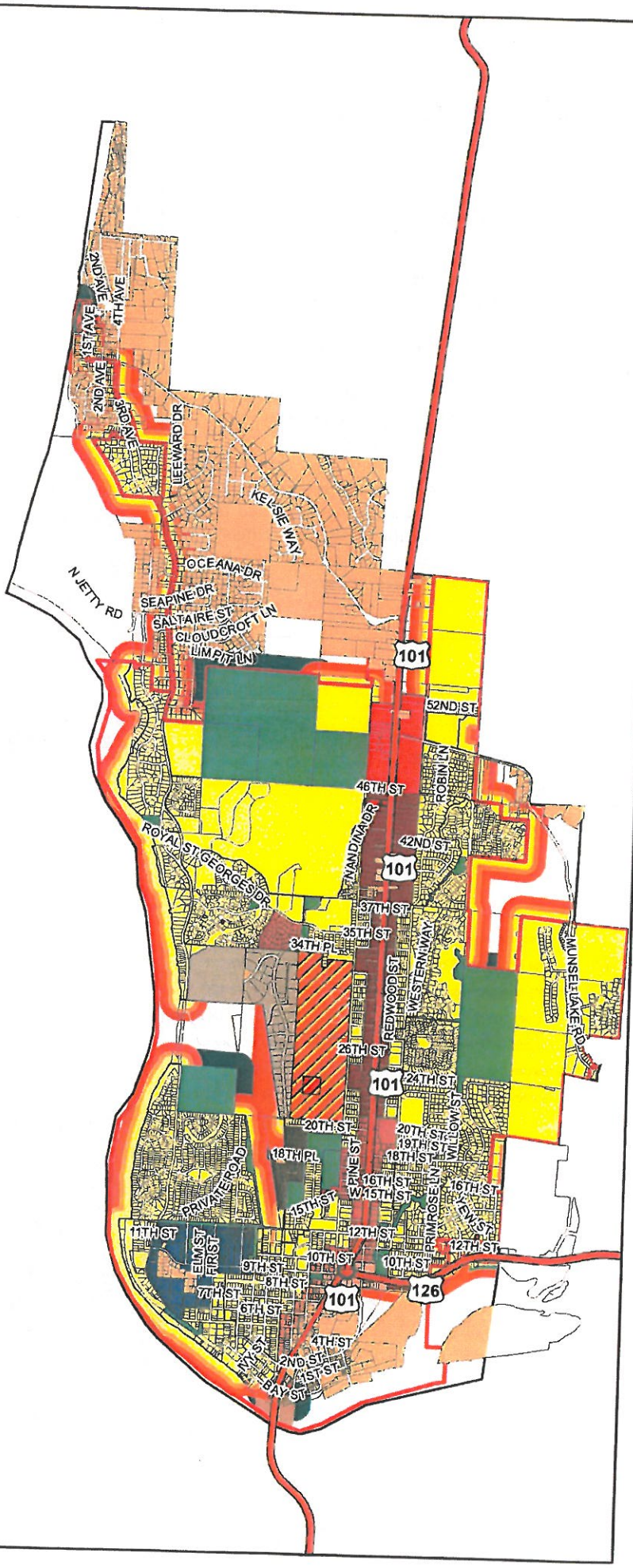
Miles



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January 23, 2015

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Miles

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TERNYIK CT
DUNEWOOD DR
SINGING WOODS DR
101
52ND ST
52ND ST
MUNSEL LAKE RD
SHERWOOD LP
46TH ST
45TH ST

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Miles

N

SHERWOOD LP
46TH ST
45TH ST
44TH ST
43RD ST
NANDINA DR
42ND ST
41ST PL
101
41ST ST
40TH ST
MUNSEL CREEK DR
38TH LP
37TH ST
E 37TH ST
36TH ST
SEABROOK LN
35TH CT
35TH WAY
35TH ST
LAURELWOOD ST
W MYRTLE LP
E MYRTLE LP
PINE ST
34TH ST
34TH PL
REDWOOD ST
33RD ST
CROSS ST
32ND ST
WESTERN WAY
MUNSEL CREEK LP
31ST ST
31ST WAY
PRIVATE ROAD
30TH ST
30TH WAY
29TH ST
OUTER DR

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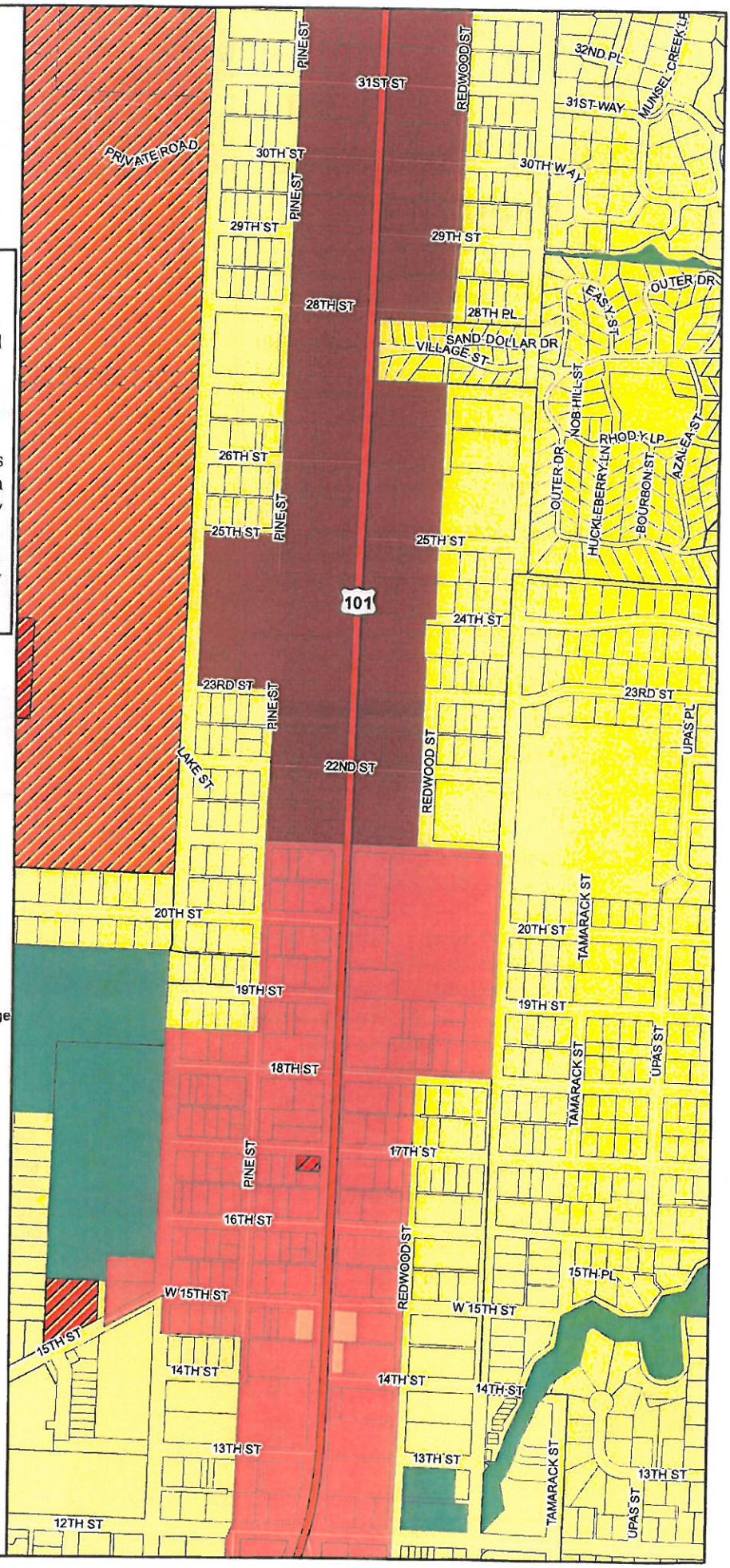

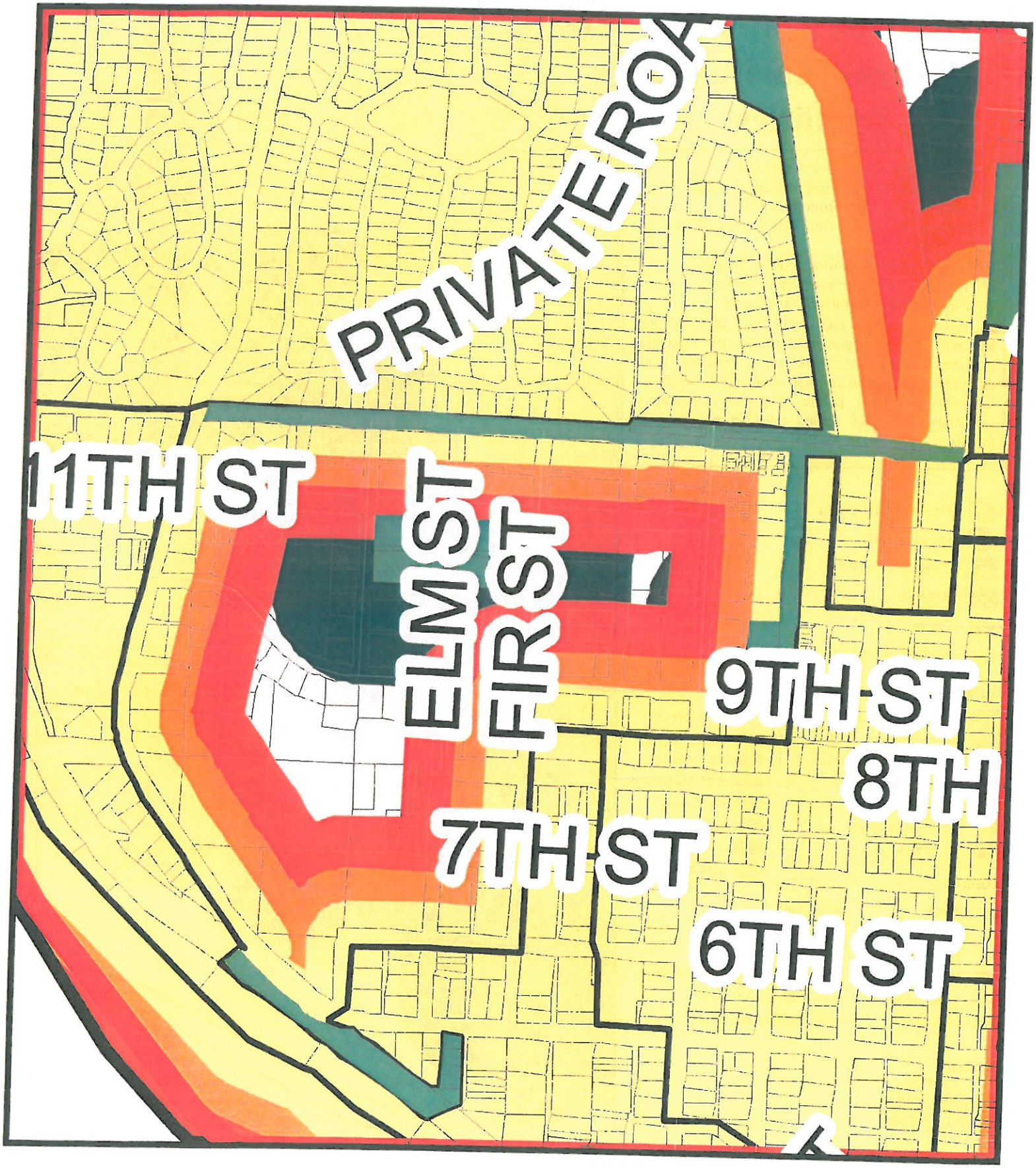
PRIVATE ROA
11TH ST
ELM ST
FIR ST
9TH ST
8TH
7TH ST
6TH ST

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Miles

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