

**TOWN OF OLD ORCHARD BEACH
TOWN COUNCIL WORKSHOP
Wednesday, October 28, 2015
TOWN HALL CHAMBERS
6:30 p.m.**

A Town Council Workshop of the Old Orchard Beach Town Council was held on Wednesday, October 28, 2015. Chair O’Neill opened the meeting at 6:30 p.m.

The following were in attendance:

**Chair Shawn O’Neill
Vice Chair Joseph Thornton
Councilor Kenneth Blow
Councilor Jay Kelley
Councilor Michael Tousignant
Town Manager Larry Mead
Assistant Town Manager V. Louise Reid
Waste Water Superintendent – Chris White
Dan Fraser – Chief Operator - Waste Water Department
Wright Pierce – Edward Leonard
Wright Pierce – Chris Dwinal**

A large number of residents of Ocean Park attended the Workshop this evening as a follow up to their petition and letters of complaint about the “odor” situation resulting from the Waste Water facility. Many indicated they felt the odor impaired their enjoyment of being outside. Some were asking for some relief and others said they felt it was time to fix the problem rather than patching and patching. Some of those who signed in at the Workshop included Dave and Joyce Chandler-Smith, Steve, Gordon and Marietta Anderson, Helene Whittaker, Ginger and Randy McMullin, Caroline and Tim McCormack, Ed and Barbara Boucher, Mark and David Jackson, John Bird, Jerome Begart.

The intent of the workshop this evening is to consider temporary solutions and also capital investments in the future for final solution to the issues. Discussion included that some of this will include education discussions. One of the outcomes of the earlier discussion with staff was putting on the web site a survey form that can be filled out by interested parties giving numbers to the degree of the odor and other factoring information that would be helpful in pinpointing the issues we are discussing.

Wright Pierce made an excellent presentation to those in attendance. It was noted that they would discuss:

**Wastewater Facilities Plan of June 2009
Odor Concerns from the Summer of 2015
Long Term Odor Control Approaches
Short Term Odor Control Approaches
Discussion**

Facilities Planning

**Town hired Wright Pierce to conduct a wastewater facilities plan in 2008;
Draft report was issued in 2009.**

Workshops were held in April 2011, and August 2012.

Since 2012, the following have been completed:

Aeration Blower Upgrades (2013)

Electrical Service Work (2013)

Secondary Clarifier 1 Upgrades (on-going)

Maintenance Building Upgrades (on-going)

Wastewater Treatment

Preliminary

Removes debris, floatables, grit

Primary

Removes 50% of particulate material

Secondary

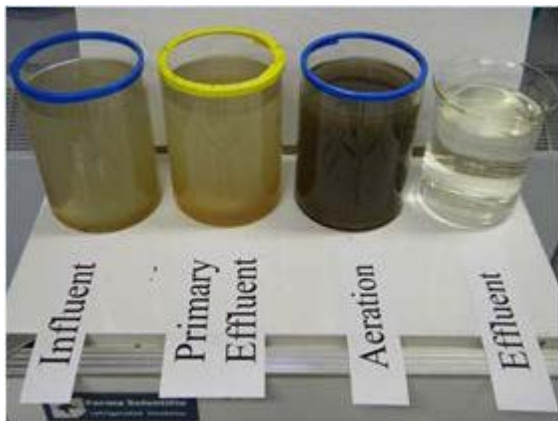
Removes 90% of organic material

Removes some nutrients

Disinfection

Kills bacteria

Biosolids Handling



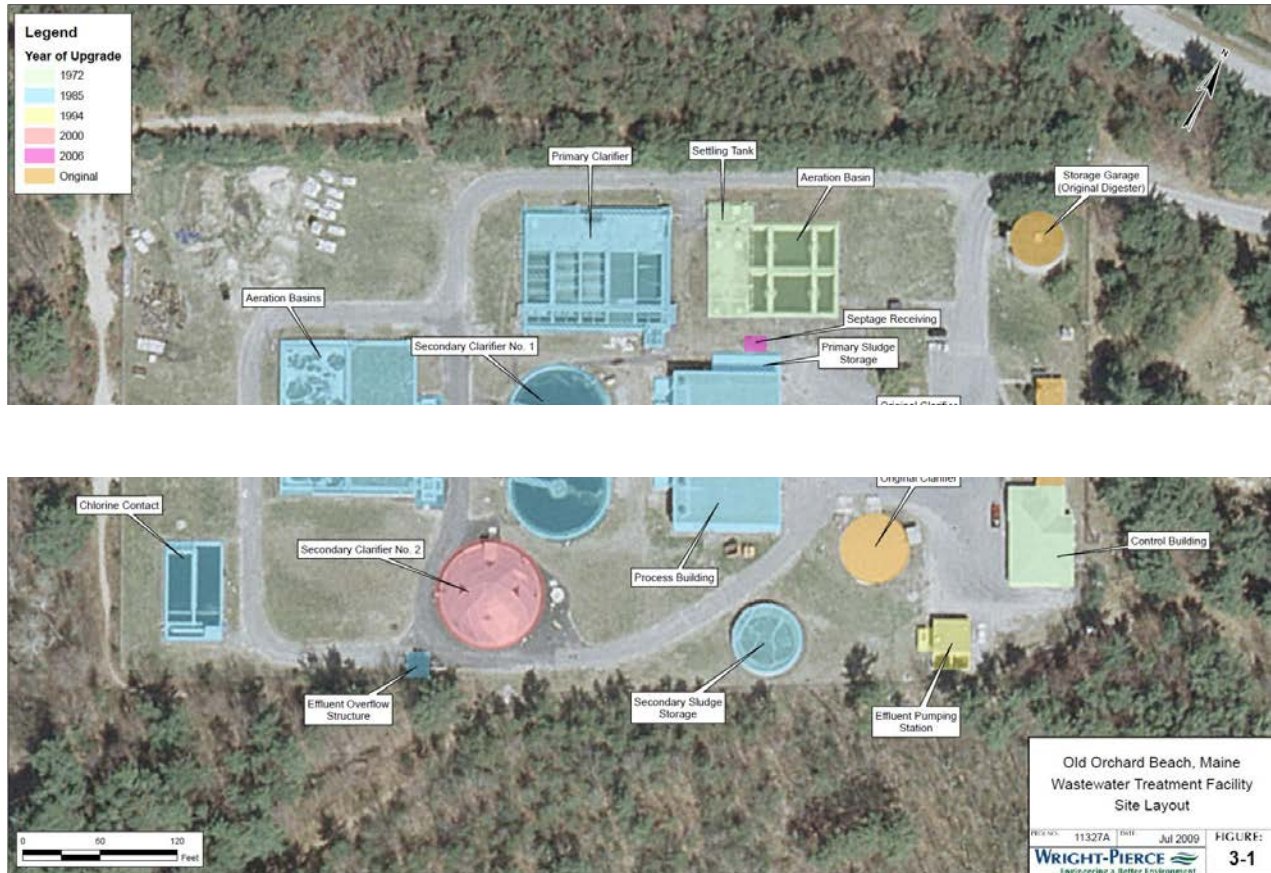
With a population of healthy, friendly bacteria which overpopulates the Sewage treatment is the process of removing [contaminants](#) from [wastewater](#), primarily from household [sewage](#). It includes physical, chemical, and biological processes to remove these contaminants and produce environmentally safe treated wastewater (or treated [effluent](#)). A by-product of sewage treatment is usually a semi-solid waste or slurry, called [sewage sludge](#), that has to undergo further [treatment](#) before being suitable for disposal or land application. Sewage treatment may also be referred to as [wastewater treatment](#), although the latter is a broader term which can also be applied to purely industrial wastewater. For most cities, the [sewer system](#) will also carry a proportion of [industrial effluent](#) to the sewage treatment plant which has usually received pretreatment at the factories themselves to reduce the pollutant load. If the sewer system is a [combined sewer](#) then it will also carry [urban runoff](#) (stormwater) to the sewage treatment plant.

A sequence of steps is required to ensure wastewater gets treated. Wastewater treatment is done in a series of steps that can have increasing effectiveness and complexity depending on the resources available. Primary treatment involves basic processes to remove suspended solid waste and reduce its biochemical oxygen demand (BOD) – the amount of oxygen microorganisms must consume to breakdown the organic material present in the wastewater. Primary treatment can reduce BOD by 20 to 30 percent and suspended solids by up to 60 percent. Secondary treatment uses biological processes to catch the dissolved organic matter missed in primary treatment. While secondary treatment technologies vary, the final phase of each involves an additional settling process to remove more suspended solids. Secondary treatment can remove up to 85 percent of BOD and total suspended solids. The highest level of wastewater treatment is tertiary treatment, which is any process that goes beyond the previous steps and can include using sophisticated technology to further remove contaminants or specific pollutants. In some cases, treatment plant operators add chlorine as a disinfectant before discharging the water. All in all, tertiary treatment can remove up to 99 percent of all impurities from sewage, but it is a very expensive process.

It was noted that this Waste Water building was built many years ago when modern and functioning equipment to control odor was not the issue at that time. Although there have been some upgrades over the years they have not sufficiently kept up with the requirements needed. Notation was made of the smell mostly during the evening hours and explanations as to why that was happening included the wind velocity, the temperature of the day, whether sludge was left remaining in the containers to be removed the next day, and other areas of concern. It was also noted that 2015 was a bad year not just in Old Orchard but in other Waste Water facilities over the state.

Needs at Wastewater Transfer Facility

Aging and inefficient equipment



Factors Impacting Needs

Needs to provide reliable and effective service for current and future flows and loading.

Need to maintain treatment performance for current and future NPDES permit.

To reduce or maintain operating costs associated with:

- Aeration blowers;**
- Sludge processing and disposal;**
- Chemical use;**
- Electricity, fuel oil, lighting, etc.**
- Labor**

It was noted that odors are generally a problem at the headworks of a plant related to solids handling. In older plants, which ours is, the headworks are often not covered which affects how much odor is experienced off site and could be the issue here. Odor is often regarded as a nuisance rather than a serious health risk so there appears to be few hard and fast rules about levels. The difficulty was also noted in that it is hard to measure odor as it is not just finding the presence of some contaminant. Very little research has focused on odor characterization and control and standard approaches to studying and solving odor problems have not been well documented. In some communities quantifying odors derived from a wastewater treatment plant was to set up and allow affected residents to serve as odor analyzers by recording odor strength in their neighborhoods, on a numerical scale of one to five; three times a day for six months. Public involvement also was encouraged through creation of an odor advisory board and by holding community meetings at the start of the project to educate residents about wastewater treatment and to discuss the odor problems.

Odors have been correlated strongly to waste strength and to wind direction, implicating the Treatment Plant as the major source of the odors. Recommendations to modify operating procedures and practices were based on the findings of these advisory boards. Odors are associated with both the collection and treatment of wastewater. The extent to which these odors become a problem in a community depends on the extent to which odors are released from the collection or treatment facility and on the proximity of the facility to the community. Our plant is not sited in a relatively remote area but rather near a large community particularly in the summer.

Needless to say that more modern facilities built near residential units are now built with odor control features. The cost of odor control can be significant, both in terms of capital investment and terms of operating costs. Odors are difficult to quantify because they are caused by a wide mixtures of compounds which have interacting effects. Controlling odor is one of the most challenging aspects of wastewater treatment. The first step in fixing the problem is identifying where it is coming from and choosing the best chemistry and maintenance to control it. Some of the suggestions included neutralization of the offending odor; masking the odor; or switching the oxygen source that contributes to the growth of bacteria. It should be noted that odors in wastewater can occur at any time but particularly problematic when combined with higher temperatures experiences in the warmer months. Odor can show up in rinse water, solid waste/sludge, collection systems both municipal and industrial, oil and water holding tanks, evaporators, secondary biological systems, incinerators, food processing and other process chemistries.

Facility Plan Conclusions

WWTF is well operated and meets current permitting; however, significant portions are aging, inefficient and do not meet current codes and standards;

WWTF will not meet future permitting without upgrades;

WWTF needs investments to improve reliability, operational flexibility, efficiency and continued development;

WWTF needs investments to address some safety, code and odor related items; and

Pump Stations need investment to maintain reliability and efficiency long-term.

Project Costs and Schedule

Phase I	\$10.0M	\$10.0M	2012-2017
Phase II	8.5M	12.6M	2022-2025
Phase III	3.6M	7.9M	2025-2030
Total:	\$22.1M	\$30.5M	

Odor Related Items from the Study

Reviewed odor complaints with Town;

Reviewed odor sources;

Evaluated methods to control odors;

Recommended odor control provisions be included in Phase II or III; and

Provided protocols to monitor odors and complaints.

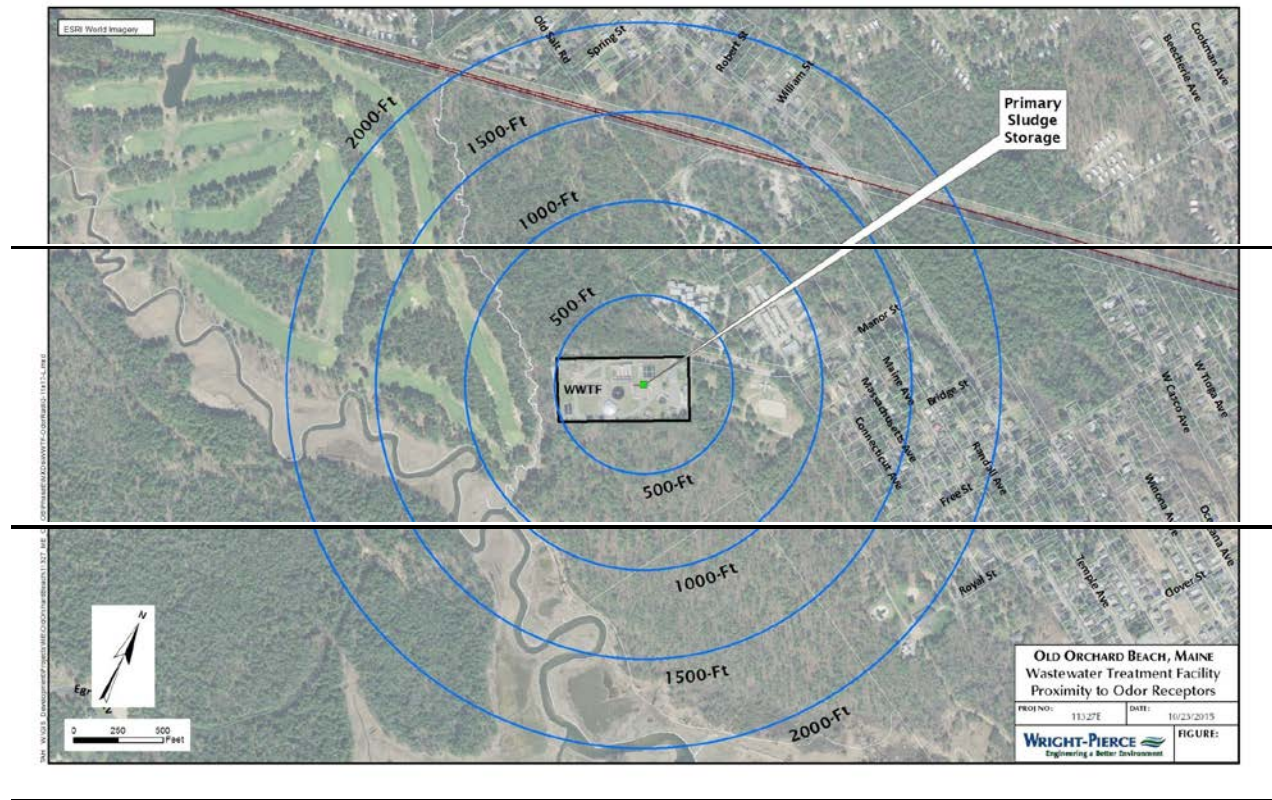
Odor Concerns from Summer of 2015

Numerous odor complaints from Connecticut Avenue/Massachusetts Avenue and Maine Avenue areas;

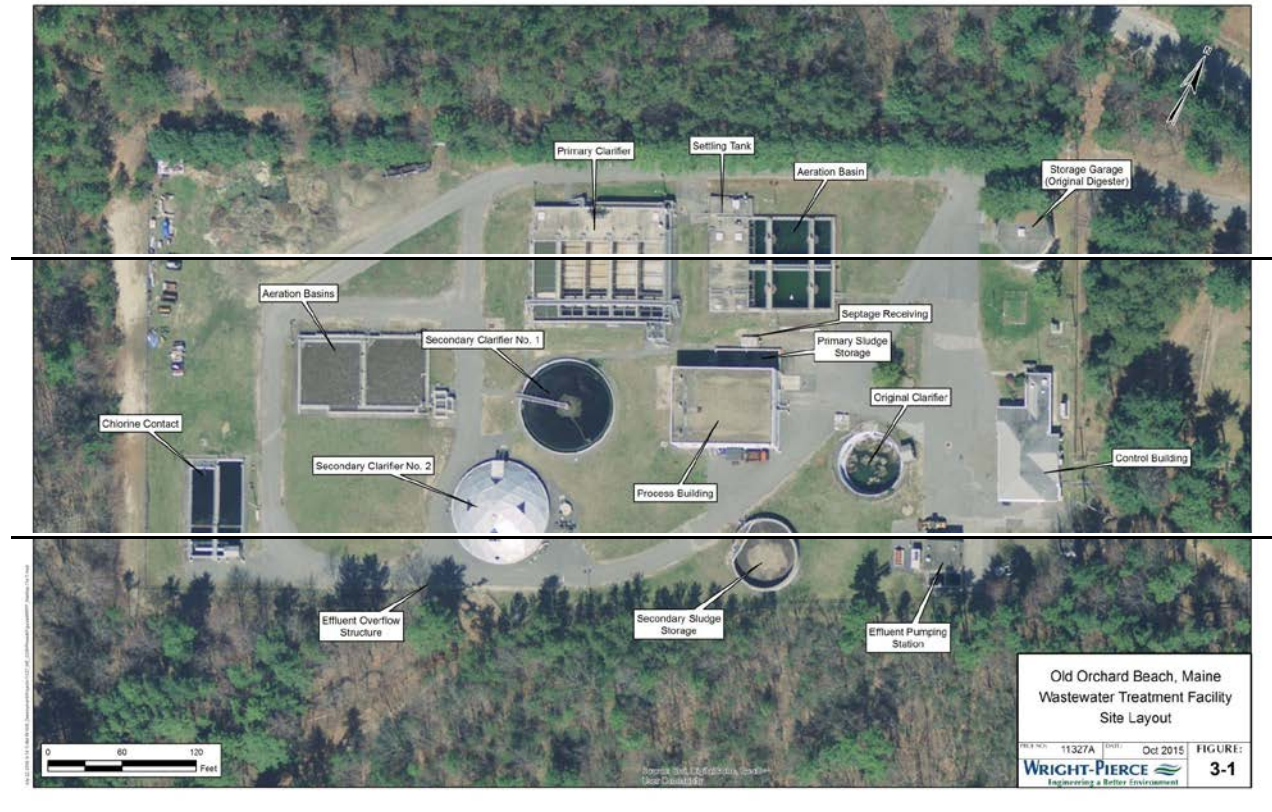
Most complaints were:

- During the evening hours;**
- Odor event lasted several hours;**
- Under “calm” weather conditions;**
- Reported to be fairly intense.**

Proximity to Odor Receptors



Existing Odor Sources



Biosolids Handling

Primary Sludge =

Blended sludge – dewatering-hauling off-site

Secondary Sludge =

Sludge Storage Tanks

Primary Sludge =

Blended sludge – dewatering-hauling off-site

Secondary Sludge =



Dewatering

Primary Sludge =

Blended sludge – dewatering-hauling off-site

Secondary Sludge =



Biosolids Hauling

Primary Sludge =

Blended sludge – dewatering-hauling off-site

Secondary Sludge =



Long-Term Strategies

Comprehensively address **strongest** odor sources:

Consider alternate mixing system for Primary Storage Tank;

Cover/capture air from Primary Sludge Storage Tank;

Eliminate, or cover/capture air from Blend Storage Tank;

Blend primary and biological sludge in-line;

Consider adding oxidant to sludge feed;

Cover/capture air from Dewatering vents/fans;

Cover/capture air from Sludge Truck Bay vents/fans; and

Treat air with a bio filter or wet chemical scrubber.

Consider strategies for other odor sources on as-needed basis.

Short-Term Strategies

Low cost operational strategies to reduce off-site odor migration:

Reduce Primary Sludge tank mixing air to minimize required;

Close Sludge Truck Bay door during dewatering;

Consider processing septage via Primary Settling tanks;

Consider adding oxidant to sludge feed;

Add automation to minimize Blend Tank storage time;

Add automation and re-configure piping to allow for “co-feeding”
Sludge in-line (versus using the Blend Tank.

Proposed Capital Project

Proposed project funding is on the November 2015 ballot for a targeted project which includes:

1. Adding dewatering equipment;

2. Adding sludge conveyors;
3. Upgrading sludge pumping; and
4. Upgrading lighting.

Could consider adding some short-term odor control strategies, To this project, if funding allows.

Some of the solutions suggestions or at least some of the ability to alleviate some of the odor issues included.

Pick up time for sludge removal

Minimize sludge setting

SCADA

Piping costs

Low cost operational controls

Address operational needs not capital needs

Capital improvements are higher archive of changes to operation and control the odor situation.

Cover primary tank

Activate carbon fixture

Rinse tanks

If the rinse waters in the process line is growing bacteria, there may be stagnant solids on the bottom of the tanks or high drag out of process chemistry combining with organics and encouraging bacterial growth. Keep solids to a minimum and use filtration if they build up.

Waste Treatment

Accumulation of solids at the bottom and sides of a tank can lead to odor from bacterial growth. Sulfate in the water, or a carryover of sulfur from oils, can act as a source for bacteria growth producing a sulfide odor. The best treatment for this is maintenance which offers an alternate oxygen source for bacteria and eliminates the source of the problem (bacterial growth).

Oil/Water Mix Odor

Waste oils collected and held in a tank may contain sulfur compounds and cause bacterial growth creating a sulfide odor.

Evaporator Odor and Foam

Odor can build as the water is driven off and the waste is concentrated. Because most evaporators are enclosed, sulfur reducing bacteria can flourish with low oxygen and high temperatures. It was mentioned that there are some products that can help to alleviate odor. These products work to replace the offending bacteria bad bacteria.

Discussion

After the presentation, time was allotted for questions from those in attendance and there were those who did speak and express their concerns including John Bird, Jerome Begart, Carolyn McCormick, Helene Whittaker, Ginger McMullin, David Jackson, Harriet Anderson. Some of their comments are reflected below:

Appreciation to the Council for their willingness to address this quality of life issue for those living in the Ocean Park area; these have been ongoing complaints for many years and funding has not addressed those needs; it has become in many instances a health issue; questions about the science of “odors”.

Wright Pierce gave some additional suggestions as a result of the questions including the fact that Wastewater treatment plants need to assure the public that odors from their processes are minimized. Hydrogen sulfide forms in the early processing stages and is typically the primary cause of odor emissions. Large urban wastewater plants have a growing number of odor treatment options from which to choose – many of which require the use of robust and reliable air moving equipment. Some control odors by pulling the air from the plant’s headworks, primary clarifiers, and sludge processing areas; filtering it through packed-bed chemical scrubbing towers; and exhausting it to atmosphere. Make no mistake: applications like this require the use of high quality industrial grade fans and are expensive.

The Council Chair assured the residents that we would move forward on these short-term solutions and also continue to discuss the broader and much more expensive long-term solutions. Areas of funding were also discussed by the Council and the Town Manager was asked to provide more information by the next Council meeting on the 17th of November. Members of the Council assured those in attendance that we would move forward on these issues. It was also asked that the residents help the study and discussion by logging (on our website) the times of odor concerns; a description, if possible, of the smell. Consideration would also be given to reducing the sept age intake and upgrading the biological handling.

One of the concerns that were pointed out by Chris Dwinal from Wright Pierce was the acre that has not been developed beyond the two sides of the plant and the concern that should that be developed the odor issue would be relevant. It was also noted that the process building is probably the biggest problem and that cans themselves have odors whether they are empty or full. Ventilation upgrades are a necessity. The Council promises to do all that is possible to minimize the output of odor. It was suggested that it would cost about, at a minimum for long-term strategies, one million dollars.

One the areas that was also discussed was future discussion on sewer fees and changing the way Old Orchard does them and the positive financial affect in order to upgrade the Waste Water Facility more quickly. The Chair indicated that there would be further discussions on this area and that historically those who have attended have been against changing the way sewer fees are addressed and that it would take positive input from this group to change minds.

ADJOURNMENT:

The Chair thanked all those who took the time and the opportunity to be part of the discussion this evening and assured those attending that the Town will actively participate in a solution to this problem recognizing that these are your homes and families that are being impacted by the odor problem.

The Workshop ended at 7:55 p.m.

Respectfully Submitted,

V. Louise Reid
Town Council Secretary

I, V. Louise Reid, Secretary to the Town Council of Old Orchard Beach, Maine, do hereby certify that the foregoing document consisting of fourteen (14) pages is a copy of the original Minutes of the Town Council Workshop of October 28, 2015.
V. Louise Reid