APPENDIX

Oregon Liquor Control Commission

Ways and Means Subcommittee on Transportation and Economic Development

February 16-17-18, 2015

APPENDIX - INDEX

Oregon Liquor Control Commission

OLCC Liquor Revenue Distribution 2013-2014

Revenue	
Distilled Spirits Sales	$518.6 M
License Fees	$5.2 M
Taxes on Beer & Wine	$17.6 M
Misc. Revenue	$.3 M
	$541.7 M
2013-14 Expenditures	
Agency Expenditures	($26.2 M)
Liquor Agents Compensation	($46.6 M)
Inventory Purchases	($255.1 M)
	($327.9 M)
Net Revenue	**$213.8 M**
Where Revenue is Distributed	
State General Fund	$121.4 M
City Revenue Sharing Account	$26.6 M
Cities	$37.9 M
Counties	$19.0 M
Mental Health, Alcoholism, and Drug Services	$8.6 M
Oregon Wine Board	$.3 M
Total Distribution 2013-14	**$213.8 M**

A detailed list of direct distributions to cities, counties, and state general fund, as well as allocations to the city revenue sharing account and mental health, alcoholism, & drug services is available on OLCC's web site, arranged by fiscal year.

LIQUOR CONTROL COMMISSION, OREGON	I. EXECUTIVE SUMMARY
Agency Mission: To promote the public interest through the responsible sale and service of alcoholic beverages.	

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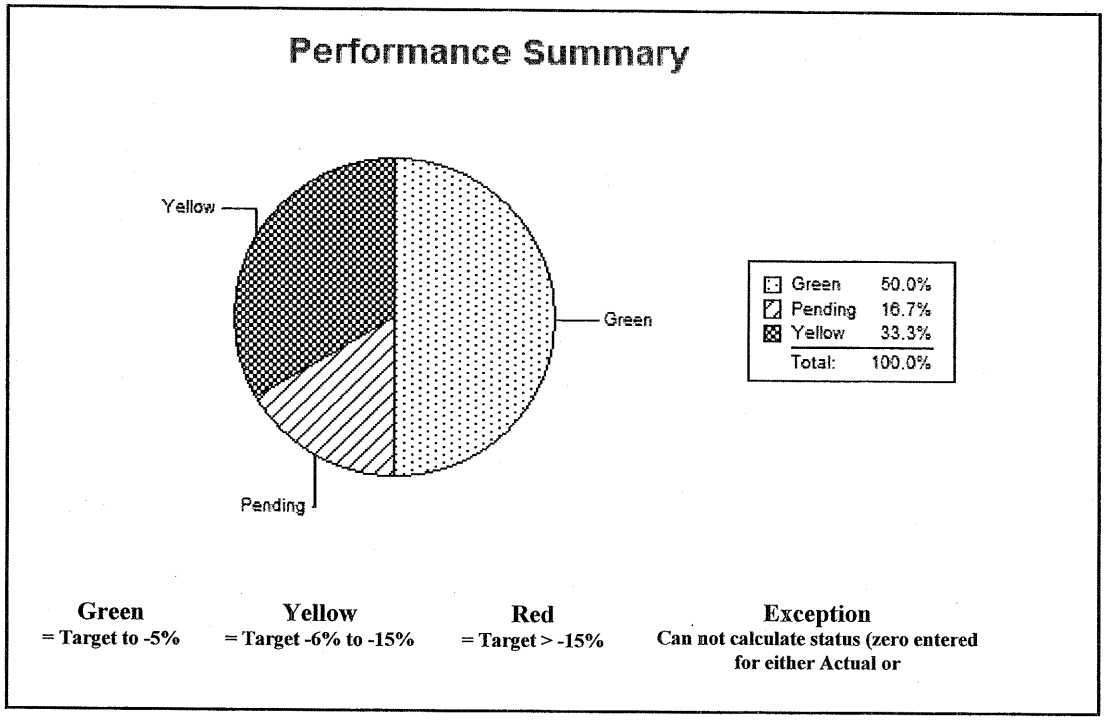


1. SCOPE OF REPORT

Agency programs/services addressed by key performance measures: This report contains key performance measures addressing the three program areas of the agency Public Safety Services Program, Distilled Spirits Program, Support Services Program.

2. THE OREGON CONTEXT

The OLCC envisions itself as a public safety agency that serves as a model for state alcohol regulation programs whose guiding principles are

Public Safety, Economic Development, and Stewardship. The OLCC identifies itself as an integral part of a greater alcohol beverage system. Using a systems approach, the OLCC sees itself as meeting the publics need for a livable community and a sustainable, healthy, and responsible marketplace. The alcoholic beverage system in Oregon is managed by the OLCC with two processes. First, the OLCC's Public Safety Services Program seeks to license safe and responsible businesses quickly. Businesses that the OLCC licenses include: bars and restaurants that serve beer, wine, and spirits by the glass; grocery and convenience stores that sell packaged beer and wine; manufacturers (breweries, brew pubs, wineries, distilleries); and importers/distributors that supply beer and wine to licensees. Once in operation, the OLCC monitors liquor law compliance of these businesses, and pursues activities and policies that promote compliance. By focusing on strategies that promote liquor law compliance, the OLCC works to address livability concerns of communities, while facilitating responsible, safe, and sustainable Hospitality, Tourism, and Grocery Industries in Oregon, among others. Second, the OLCC's Distilled Spirits Program seeks to meet current and emerging customer expectations for distilled spirits product selection and availability, price, and retail outlet convenience. Through the work of the Distilled Spirits Program, the OLCC makes a wide selection of distilled spirits products regularly and reliably available at its 248 contract liquor retailer locations, at prices that are the same regardless of where they are purchased in the state. The OLCC contracts with private independent business operators to sell packaged distilled spirits directly to individuals, and to local licensees who then are allowed to sell distilled spirits by the drink at their place of business. Through the processes of both the Public Safety Services Program and the Distilled Spirits Program, the OLCC balances the sometimes competing demands of the agency's stakeholders and customers. By optimizing the alcohol beverage system in Oregon, the OLCC creates a sustainable marketplace, where the concerns and interests of a wide group of individuals and businesses can be accounted for. To insure that the OLCC continues to optimize Oregon's alcohol beverages system, these key measures have been created to monitor the agency's performance.

3. PERFORMANCE SUMMARY

For 2014, the OLCC reports 4 of 6 KPMs met or are near their respective targets. Most notably, the Commissioners' evaluation of best practices improved dramatically and met the 100% target for 2014.

KPM#1, Sales to Minors. Licensees tested recorded a pass rate of 81% for the state during 2014 which is just below the new target of 82%. This was an increase of 3% from the previous fiscal year. The 2013 Legislature raised the target from 80% to 82%.

KPM#2, Rate of Second Violation. OLCC recorded a rate of 13% of licensees committing a second violation within two years of committing a first violation for the 2014 analysis. This is similar to 2013 which reported a rate of 12%. The 2013 Legislature established a target of 12% which is one percent below the FY 2014 result.

KPM #3, Licensing Time. Licensing time averaged 76 days during 2014, just above the new statewide target of 75 days. The 2013 legislature reduced the target for KPM #3 from 90 days to 75 days, but local governments still have up to 90 days to respond to applications.

KPM#4, Customer Service. The overall agency rating was 77 percent (rated as good or excellent) compared to 75 percent in 2013. The OLCC missed the 85 percent target in all five areas when weighted averages were taken over all survey groups. Overall, the OLCC exceeded targets in 12 out 30 possible response categories across the five respondent groups.

KPM#5, OLCC Rate of Return. The OLCC achieved a rate of $2.94 in revenue distributed for public use for every $1 spent by the agency during 2013. This significantly exceeded the target of $2.70. The 2014 rate was influenced by a continued recovery in liquor sales and also helped by the $0.50 per bottle surcharge.

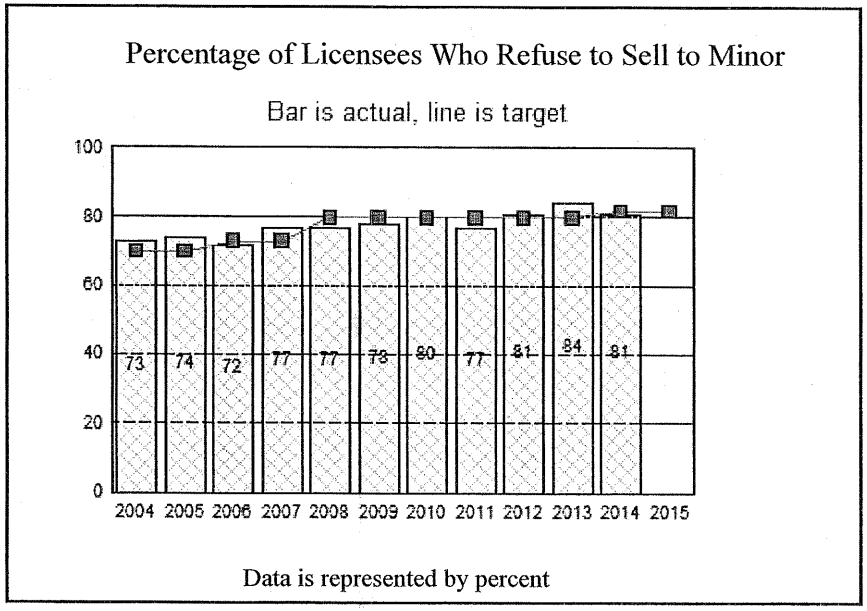
KPM#6, Best Practices. The OLCC achieved a rate of 100 percent of the best practices met by the Board according to a self-assessment survey of the commission. This higher score likely resulted from reduced turnover of Commissioners and Commission leadership during the year.

4. CHALLENGES

The major challenges to the effective operation of the OLCC, as reflected by these Key Performance Measures, result from a lack of resource flexibility needed to adjust to changing public safety, statutory, and market conditions. Being adaptive is paramount for the agency to successfully respond to growth in Oregon's population and economy, and the subsequent public safety and public demand needs. Upgrading the agency's information technology systems are critical to shortening the licensing process, tracking enforcement data for second violation measurement and making information available to OLCC customers in a timely manner. Factors affecting the results of the following measures are generally related to the needs of the agency to have flexibility to adapt to its changing environment.

5. RESOURCES AND EFFICIENCY

KPM #1	Sales to Minors – Percentage of licensees who refuse to sell to minor decoys.	2002
Goal	PUBLIC SAFETY - Meet potential customer demand for alcoholic beverages and outlets in a socially responsible manner.	
Oregon Context	Benchmark #50a - 8th Grade Alcohol Abuse (Formerly BM #49 - Teen Substance Abuse) and Governors Guiding Principle of Public Safety.	
Data Source	OLCC enforcement records, minor decoy database.	
Owner	OLCC Public Safety Division, John Eckhart Director 503.872.5017	



1. OUR STRATEGY

The OLCC has three principal strategies for achieving the goal of public safety relating to this measure. The first strategy is to ensure the OLCC has adequate resources dedicated to public safety initiatives. The second is to develop and execute policies that ensure outlets

comply with state liquor laws. The third strategy is to strengthen partnerships with other stakeholders that share the agency's public safety objectives

2. ABOUT THE TARGETS

The targets for this measure are based on historical averages of licensees refusing to sell alcoholic beverages to minor decoys. This target is viewed as a threshold; a level of compliance the OLCC strives to exceed. The OLCC, in the past, has regularly exceeded the target level for this measure. Given this fact, the OLCC proactively increased the target level from 70 percent to 73 percent for the 2006 reporting period. The state Legislature raised the target during the 2007 session to 80 percent and then to 82 percent during the 2013 session.

3. HOW WE ARE DOING

The FY 2014 result shows an 81.1 percent compliance rate of "no sales" to minors and exceeds the legislative target. The compliance rate decreased by 3 percent from FY 2013 and equaled FY 2012 which also had an 81 percent compliance rate. The result seems driven by a drop in compliance in the Portland and Salem metropolitan areas, which experienced a 6 and 9 percent drop in compliance from last fiscal year. Despite the performance plateau three of five regions experienced improved compliance and there is still a trend of improvement in historical compliance rates.

4. HOW WE COMPARE

Other liquor law enforcement agencies around the United States also conduct minor decoy operations. However, many of these states (e.g., California) will often publicize the decoy operations ahead of time, which may temporarily and artificially inflate those respective compliance rates. In these cases, comparisons to the Oregon compliance rate are misleading. Some states (e.g., Maine and Louisiana) claim to track sales to minor statistics, but either combine that information with other compliance check activities prior to publishing, or do not readily publish the information. The OLCC statistics only reflect the minor decoy operations executed by agency inspectors or minor decoy operations where OLCC participates with local law enforcement. In both cases, the results of these operations are compiled for this KPM.

5. FACTORS AFFECTING RESULTS

A key factor driving these results is frequency of operations. The "perception of detection" is a significant motivator to comply with liquor laws for licensees and their staff. When the number of operations decreases, a licensee may not perceive the risk of detection as likely and choose to make decisions that do not comply with the public safety laws, such as selling alcoholic beverages to minors.

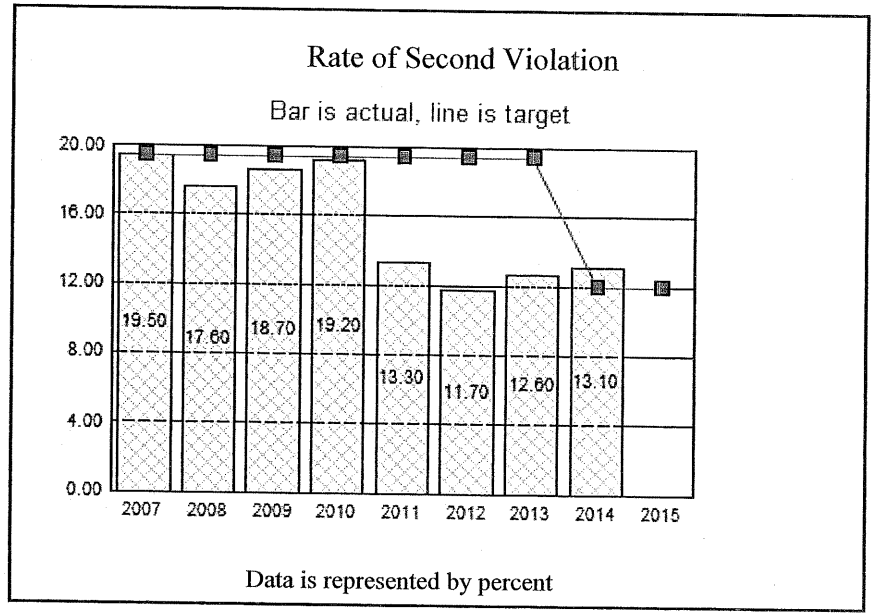
6. WHAT NEEDS TO BE DONE

The OLCC has leveraged its experience in conducting minor decoy operations by consulting with and training local law enforcement agencies to effectively conduct their own operations. The creation of these synergistic partnerships bring together the OLCC's knowledge base with the personnel resources of other law enforcement agencies so more operations can be conducted around the state. It should also be noted that an "inspection gap" continues to form as the number of licensed businesses is growing with respect to the number of OLCC inspection/public safety personnel. This gap results in a general decrease in the number of minor decoy operations conducted only by the OLCC and the need for local law enforcement partnerships.

7. ABOUT THE DATA

This measure is calculated from the compiled results of minor decoy operations conducted during the fiscal year out of each of the five OLCC regional offices; Bend, Eugene, Salem, Medford and Portland Metro. The measure is calculated by dividing the total number of instances when a licensee refused to sell to a minor by the total number of attempted minor decoy purchases. OLCC inspectors conducted 1,804 operations in FY 2014 which constituted about 15 percent of all licensed retail premises during the year.

KPM #2	RATE OF SECOND VIOLATION – Percentage of licensees detected to have violated a liquor law in a second, separate, incident occurring within 2 years after the year of the first violation.	2008
Goal	PUBLIC SAFETY - Meet potential customer demand for alcoholic beverages and outlets in a socially responsible manner.	
Oregon Context	Governor's Guiding Principle of Public Safety. OLCC Mission Statement.	
Data Source	OLCC Enforcement and Administrative Process and Procedure Records.	
Owner	OLCC Public Safety Services Program, Public Safety Division, John Eckhart, Director 503.872.5017	



1. OUR STRATEGY

Innovations and Enhancements to Education, License Processing, Enforcement, and Adjudication Functions.

2. ABOUT THE TARGETS

During the 2013 session, the Legislature set a target of 12 percent for this measure.

3. HOW WE ARE DOING

The FY 2014 second violation rate is 13.1 percent which is a slight rise from the previous year. The FY 2013 second violation rate was 12.2 percent. The second violation rate for the last three fiscal years has stayed steady between 12 and 13 percent. The historical rates back to FY 2004 averages a second violation rate of 16 percent.

4. HOW WE COMPARE

We have found no other agencies or states with a similar measure.

5. FACTORS AFFECTING RESULTS

During FY 2014, 48.5 percent of the violations issued by inspectors were for sales to minors (Failure to Verify Age). As the compliance rate for sales to minor increases the rate of second violation will likely decrease.

6. WHAT NEEDS TO BE DONE

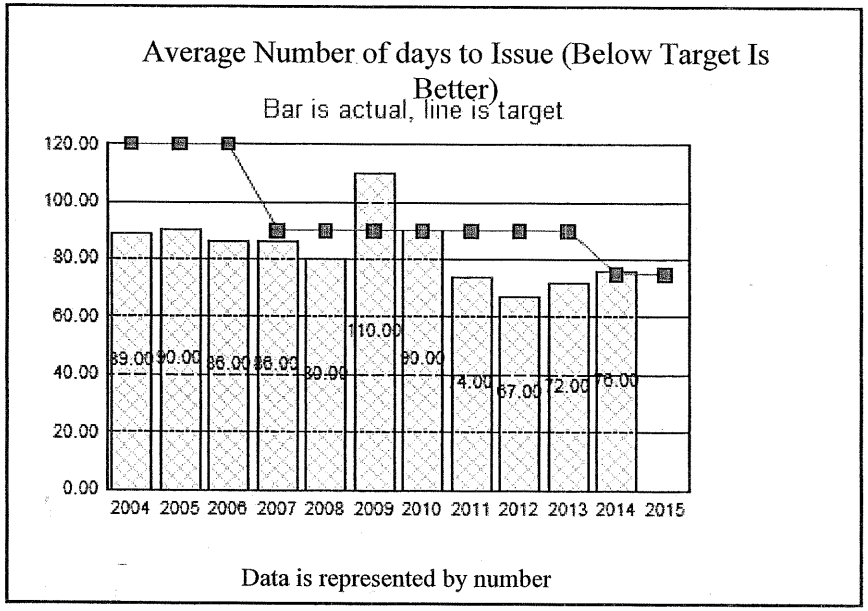
OLCC will continue to look at this measure and how the information is generated to determine if significant changes are needed for future years. OLCC continues to implement new strategies of regulating and educating licensees. This includes implementation of the First Call Program, public service announcements and a poster campaign warning of the dangers of furnishing alcohol to minors. These proactive education efforts combined with targeted enforcement operations such as minor decoy compliance checks will improve licensees' compliance with liquor laws.

7. ABOUT THE DATA

Key Performance Measure #2; Rate of Second Violation was crafted in 2007 as a new public safety measure for OLCC. The measure is calculated dividing the number of premises that have committed their first serious liquor law violation (category 1, 2, or 3) in a given year, by the number of those premises that go on to commit another separate serious liquor law violation within the two years following the year of their first. Historically this calculation has been done manually looking for premises matches across thousands of violation records. Recently, OLCC has been able to employ both statistical and database tools to

refine the data and allow for electronic matches of licensed premises that violate liquor laws across multiple years. This has resulted in a much more consistent calculation of this measure and objective. The measure results for all years have been recalculated using this new methodology and are presented

KPM #3	Licensing Time – Average days from application receipt to license issuance.	2005
Goal	ECONOMIC DEVELOPMENT To enable Oregon businesses to begin and continue to operate safely and responsibly as soon as possible, supporting Oregon's Hospitality and Tourism Industries.	
Oregon Context	Oregon Benchmark #1(Employment in Rural Oregon), #2 (Trade Outside Oregon), #3 (New Employers), #4 (Net Job Growth) Oregon benchmarks relating to Growth of Oregon's Economy and Job Growth. Governors Guiding Principles of Business and Job Growth.	
Data Source	OLCC license applications processing records. Internally developed system report: License Process Period Analysis-Number of Days to Issue a License.	
Owner	OLCC Public Safety Services Program –Will Higlin – License Services Director 503.872.5224.	



1. OUR STRATEGY

The OLCC's strategy for meeting this goal is to streamline, simplify, and automate the liquor licensing process. In pursuing this strategy, the OLCC hopes to achieve many positive outcomes, including the reduction in the number of days to issue a license.

2. ABOUT THE TARGETS

Targets are based on historical averages and expected workloads. Previous reports have indicated the target for this measure as a range; this is due to a number of external factors that influence the time to issue a license (e.g. local government review or receipt of license fees). The 2007 Legislature asked the agency to change the target to a fixed level, and to set that level to 90-days beginning in FY 2008. The 2013 Legislature has reduced the target again to 75 days beginning in 2014. The agency strives to issue liquor licenses to responsible and safe businesses faster than the measures target, i.e. it is desirable to report actual levels that are below the target.

3. HOW WE ARE DOING

4. HOW WE COMPARE

It is difficult to make direct comparisons due to the investigative and legal review aspects of the Oregon licensing process that do not translate to other licensing bodies.

5. FACTORS AFFECTING RESULTS

There are many factors affecting the number of days it takes to issue a liquor license; some internal and some external. Internal factors continue to be identified and streamlined through process improvements and technological solutions (automations). External factors are difficult to control. The primary external factor affecting how quickly a liquor license can be issued is the license application review by the local governing body (city or county). Statute gives local government up to 90 days (45 days plus and additional 45 day extension – if requested) to review a license application within their jurisdiction and provide a recommendation (positive, negative, or neutral). The OLCC cannot complete the processing of an application until the local government review is completed. Lengthy application review by local governments usually occurs in the larger metropolitan areas, such as Portland. These areas also have higher numbers of license applications, in absolute terms, which influence the overall statewide average

licensing times. Additionally, the timeliness of the applicant in providing materials necessary to the application investigation can impact overall processing time. Applicants not prepared for or committed to the process may have longer processing times. A good illustration of how factors outside of agency control may impact the total time to issue a license can be found in looking at the licensing work of the Portland field office. For licenses issued by the Portland office (a subset of the KPM) between January 1, 2011 and June 30, 2011, the average time to issue a license was approximately 90.7 days. However, during the same period staff processing time totaled to an average of only 32.9 days; only 36% of the total time to issue a license. The remaining 64% of the time is driven be external factors described above, and are outside the control of the agency.

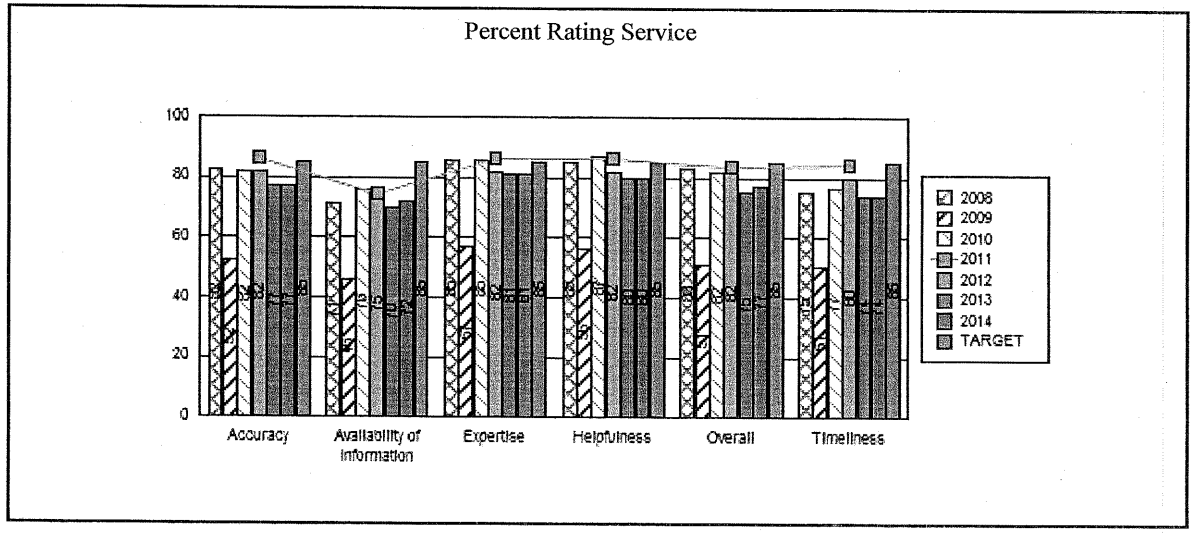
6. WHAT NEEDS TO BE DONE

The OLCC is pursuing long-term solutions to its business needs that include regulatory innovations, such as risk-based decision making methodologies, the implementation of streamlining measures, and the development of a custom enterprise licensing system that will automate many manual processes as well as growing the agency's online service capacity. The OLCC has proposed an incentive system to share licensing fees with local governments that process applications within a narrow time frame.With these enhancements and innovations the OLCC can continue to meet the targets of this measure.

7. ABOUT THE DATA

The data supporting this measure is compiled by the OLCC licensing unit and reported through the agency's master file system.

KPM #4	CUSTOMER SERVICE - Percent of customers rating their satisfaction with the agency's customer service as "good" or "excellent": overall, timeliness, accuracy, helpfulness, expertise, availability of information.	2006
Goal	STEWARDSHIP The OLCC will sustain high-level customer service. It will continue to improve its customer service levels by finding more efficiencies, improving time frames for delivering services, and by making information accessible to customers and the public.	
Oregon Context	Governors Guiding Principle of facilitating the growth of business and jobs by strategically investing in human capital and infrastructure.	
Data Source	Annual OLCC Customer Service Survey conducted via Surveymonkey.com. and paper survey cards for visitors to the OLCC main office. Links to online survey were sent to 4 stakeholder groups by email including employees, stakeholders, liquor store agents, and Server Education providers. In addition, a link for licensees to take the survey was posted in the license section of the OLCC website and an invitation for public to take the survey was posted on the OLCC social media sites. Paper surveys were made available at the reception desk for licensees and the public that came into the agency in person during a 1 month period from August 1, 2013 to August 31, 2013. Results are available by stakeholder group, but are consolidated here.	
Owner	OLCC Management and Consulting Services Division, Bill Schuette Research Analyst, 503.872.5023	



1. OUR STRATEGY

There are two principle strategies directing the OLCC's activities toward this goal. First, the OLCC has a strategy of strengthening partnerships with stakeholders (public safety, community, business, government, general public). The second strategy is to provide responsible stewardship to the states assets. Feedback from stakeholders through a customer service survey is an essential tool for the OLCC to evaluate its performance in following these strategies.

2. ABOUT THE TARGETS

The 2007 Legislature asked the agency to set the target to 80% for each category beginning in 2008. The 2013 Legislature asked the agency to raise the target to 85% beginning in FY 2014

3. HOW WE ARE DOING

The OLCC missed the 85 percent target in all five areas when weighted averages were taken over all survey groups. However, the OLCC met or exceeded the 85 percent average target for surveys from Liquor Agents and Server Education. Overall, the OLCC exceeded targets in 12 out 30 possible response categories. The lower average scores were driven by much larger and less favorable responses from the general public compared to prior years. The agency continues to make efforts to increase information availability through Gov Alerts and posting updates on the agency website.

4. HOW WE COMPARE

The Commission is unaware of any other state entities that regulate alcohol licensing and sales that conduct similar surveys.

5. FACTORS AFFECTING RESULTS

There were an average of 348 respondents from the five survey groups that answered every question. There was not a significant difference in overall results between weighted and non-weighted averages, survey responses from a larger pool of public respondents trended lower than other groups. Significant media coverage of agency issues through the year due to a proposed ballet measure may have affected results from stakeholders and the general public.

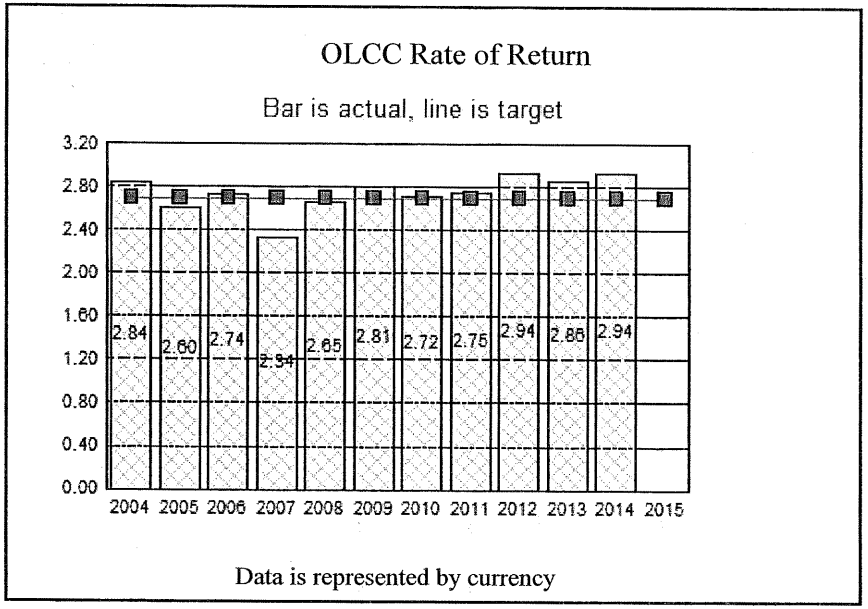
6. WHAT NEEDS TO BE DONE

The agency strives to provide the highest levels of customer service, balancing the needs of all its stakeholders. We will continue to seek policy and process enhancements that will result in the agency meeting, and exceeding, its customer service goals such as improving our average licensing time and increasing customer convenience by implementing the pilot programs for selling beer and wine in liquor stores.

7. ABOUT THE DATA

After the close of the Oregon fiscal year, surveys were collected from identified stakeholders that have had dealings with the OLCC during the previous 12 months. The agency maintains email lists for key stakeholders (e.g. distilleries, neighborhood associations, law enforcement and manufacturers), liquor store agents, and server education providers. These groups were emailed during the survey period with a link to Surveymonkey.com where they could provide a response. Licensees could fill out the surveys at the OLCC office or were given a web link where they could take the survey online. This year we also added a QR Code option that would allow potential survey participants visiting the office to scan a card with their smart phones and take the survey online. Public responses were gathered by posting an invitation on OLCC's social media sites (Facebook and Twitter) with a link to take the survey. The OLCC continues to explore cost effective ways of reaching out to all stakeholder groups for feedback.

KPM #5	OLCC Rate of Return – Net OLCC distribution divided by actual expenses.	2007
Goal	STEWARDSHIP The OLCC follows a socially responsible business model, and provide responsible stewardship of its assets, managing risks and protecting revenue flows.	
Oregon Context	Governors Principle of Government Efficiency and Accountability.	
Data Source	OLCC Consolidated Annual Financial Statements (Oregon FY)	
Owner	OLCC Support Services Program Financial Services Division, Michael O'Connor Director, 503.872.5163	



1. OUR STRATEGY

Provide a stable rate of return that reflects effective, responsible, and balanced operations.

2. ABOUT THE TARGETS

The 2007 Legislature asked the agency to set the target for this new measure at $2.70. The target reflects the agency's mission of balancing public safety objectives with those of making distilled spirits safely available to consumers and licensees. The OLCC seeks to hit this target as closely as possible; given posting rates of return significantly over or under the target may indicate a system out of balance.

3. HOW WE ARE DOING

The OLCC rate of return in FY 2014 was $2.94 for every dollar spent. It went up slightly from $2.86 in FY 2013 and matches the $2.94 during FY 2012. During FY 2014 the surcharge generated $15.2 million in additional revenue. Without the surcharge the ratio would have fallen from $2.94 to $2.73 indicating that the target would have still been met without the surcharge, but that income to state and local governments would be reduced.

4. HOW WE COMPARE

Direct comparisons to other Oregon state agencies are difficult to find as the nature of the OLCC's mission is unique. There are very few profit generating agencies in state government, and none that exactly share the OLCC's objective of balancing public safety with revenue generation. Comparisons with private enterprises are also difficult; being most businesses are concerned with strict profit maximization, without performing any self-regulating functions that temper profit.

5. FACTORS AFFECTING RESULTS

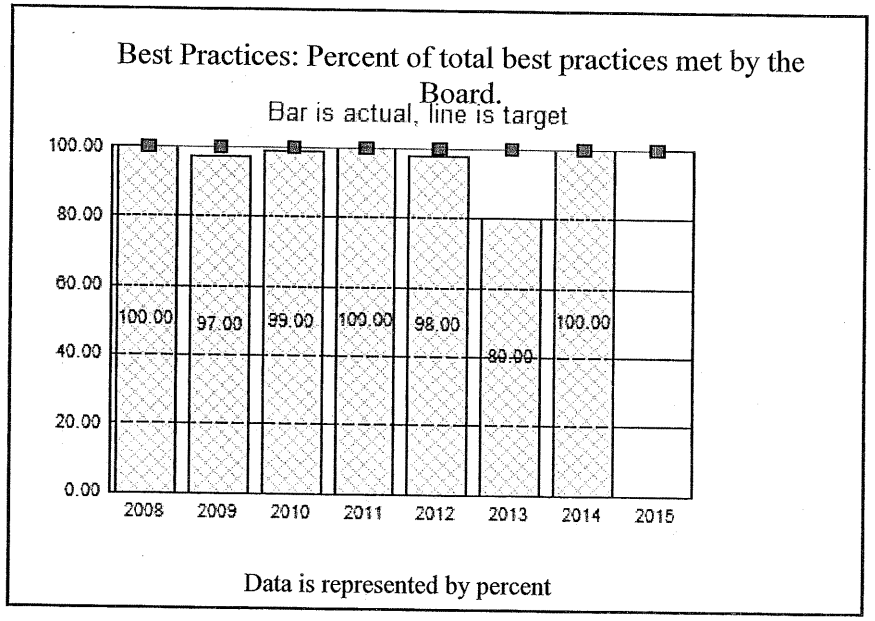
There are many factors that affect the agency's rate of return. Gross revenue from liquor sales increased 4.2 percent during FY 2014 compared to FY 2013. Costs rose more slowly than sales relative to previous years, meaning that the OLCC distribution climbed 1.3 percent more than sales. However, other factors affecting the result are: changes in consumer preferences, resource capacity of the agency's Distilled Spirits Program, moderating agency policies, budget limitations, etc.

6. WHAT NEEDS TO BE DONE

The agency continues to review the underlying factors driving the rate of return, and implement adaptive strategies to optimally manage Oregon's control systems. OLCC continues to anticipate investment s needed to maintain the system and will propose changes to the budget to meet the demands of the consumer.

7. ABOUT THE DATA

KPM #6	Best Practices: Percent of total best practices met by the Board.	2007
Goal	STEWARDSHIP The OLCC will provide responsible stewardship of its assets, managing risks and protecting revenue flows. The OLCC will sustain high-level customer service. It will continue to seek to improve its customer service levels by finding more efficiency, improving time frames for delivering services, and by making information accessible to customers and the public.	
Oregon Context	The 2007 Legislature asked the agency to set the target for this measure to 100%. It is the expectation of the Legislature that the commissioners who head this agency operate with the highest levels of governance, as described by DAS best practices standards.	
Data Source	The 15 question commission governance self-assessment survey was distributed to the 5 OLCC Commissioners via an online survey (surveymonkey.com). The commissioners were asked to respond to the yes/no questions, and had an opportunity to provide comment or explanation for each response. The 5 self-assessment results were downloaded and compiled using MS Excel.	
Owner	OLCC Management Consulting Services Division, Peter Noordijk, Data Analyst, 503.872.5148.	



1. OUR STRATEGY

Perform the annual self-assessment and evaluate the OLCC's performance against the defined best practices for Boards and Commissions. Seek and maintain internal policies and procedures that promote the highest standards at the OLCC.

2. ABOUT THE TARGETS

The 2007 Legislature asked the agency to set the target for this measure to 100%. It is the expectation of the Legislature that the Commissioners who head this agency operate with the highest levels of governance, as described by DAS best practices standards.

3. HOW WE ARE DOING

This is the seventh year the self-assessment has been taken by the agency's Commissioners. Four Commissioners responded to the FY 2014 request to complete this self-assessment and all four Commissioners answered every question. Unlike last years . There was 100 percent agreement among the responding Commissioners that OLCC best practices were being met. The assessment indicated that the Commission's governance practices are hitting the target of 100 percent.

4. HOW WE COMPARE

Direct comparisons to other Oregon state agencies are difficult to find as the nature of the OLCC's mission is unique.

5. FACTORS AFFECTING RESULTS

Response rates will impact the average. In the case of FY 2014 four out of five Commissioners responded to the survey. With a new permanent executive director and a full commission, it appears that the Commissioners felt prepared to respond. We did have one Commissioner who failed to respond.

6. WHAT NEEDS TO BE DONE

The agency expects to bring itself into alignment with the specifically stated standards. The agency will also work to effectively demonstrate to the new and

continuing Commissioners the examples of how these standards are being met or exceeded. Agency management also works to educate new Commissioners on governance and processes so that they are current on their responsibilities and agency goals.

7. ABOUT THE DATA

Data was collected from Commissioners by providing them the self-assessment form online. Fifteen questions were asked that target toward the following five best practice areas; executive leadership, strategic management, policy activities and development, financial and audit information and management practices. Answers were categorized by yes (agreement) or no (disagreement). This data was compiled by the research analyst, and reported here for FY 2013.

LIQUOR CONTROL COMMISSION, OREGON	III. USING PERFORMANCE DATA
Agency Mission: To promote the public interest through the responsible sale and service of alcoholic beverages.	

Contact: Peter Noordijk, Data Analyst	**Contact Phone:** 503-872-5148
Alternate: Michael O'Connor, Director of Financial Services	**Alternate Phone:**503-872-5163

The following questions indicate how performance measures and data are used for management and accountability purposes.	
1. INCLUSIVITY	*** Staff :** Executive and technical staff are involved in the creation of performance measures. Technical staff is responsible for collecting and reporting performance measure data. *** Elected Officials:** The Oregon Legislature directed the agency to set various targets for the above measures. *** Stakeholders:** The OLCC strives to maintain strong relationships with its stakeholders; implicitly and explicitly incorporates stakeholder concerns into agency business. *** Citizens:** The OLCC strives to maintain strong relationships with its stakeholders; implicitly and explicitly incorporates stakeholder concerns into agency business. The OLCC publishes its KPMs on the agency website for public access.
2 MANAGING FOR RESULTS	The OLCC continues to improve the definition, collection, and retention methods of performance data at all levels within the agency. High-level performance measures, and specific management measures, are used as feedback tools helping the agency evaluate its heading and speed as it works towards its strategic objectives. The agency's strategic plan was developed and organized by delineating work unit level goals, activities, and outputs that roll up to higher, more general, agency strategic outcomes. Within this structure, the agency's systemic nature is made evident, and each interrelated unit within our system can see where it fits, and how it contributes to moving the OLCC towards its strategic objectives. The OLCC has initiated streamlining and automation projects that will improve organizational awareness and provide tools to improve performance and customer service, allowing the agency to be much more flexible and adaptive to the demands of Oregonians.
3 STAFF TRAINING	OLCC's Performance Measure Coordinator participates in the roundtable meetings and regional government accountability/measurement conferences. OLCC technical staff has defined and incorporated the notion of high level performance measurements into the agency's strategic planning as an effective feedback mechanism.
4 COMMUNICATING RESULTS	*** Staff :** The OLCC communicates KPM results through the posting of the APPR on the agency's website.

	*** Elected Officials:** The OLCC communicates KPM results through the posting of the APPR on the agency's website and by including the annual report in the agency's budget documents, which are reviewed by LFO and the Legislative Ways and Means Committee. *** Stakeholders:** The OLCC communicates KPM results through the posting of the APPR on the agency's website. *** Citizens:** The OLCC communicates KPM results through the posting of the APPR on the agency's website.

OLCC STRATEGIC PLAN

Internal Initiatives

High Resources, High Impact

- Agency-wide database, enter data once (Top choice for both Low and High resources)
- Online server permit application process, renewal, payment
- Online license application process, renewal, payment

• • • • •

- Implement Marijuana Initiative
- Install additional conveyers and sortation software
- Upgrade phone system
- Repair Roof

Set clear goals and standards; measure results

Utilize cross-departmental teams

Hold quarterly OLCC all staff meetings

Low Resources, High Impact

- Provide customer service training to staff
- Add a section on the web for server permit education
- Train employees on how to use technology

Provide opportunities for greater inclusion and for employees to contribute

Get staff input on key decisions

Business Case

Policy Option Package 104

Increasing OLCC Warehouse Shipping Capacity; Installation of an Automated Sortation System with Additional Conveyor Capacity

Submitted By:

Oregon Liquor Control Commission

09/24/2014
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Executive Summary

The Oregon Liquor Control Commission focuses on producing and growing stable revenue for the support of public programs. Its stewardship of sales of liquor and collection of beer and wine privilege taxes are optimized to protect the long-term stability of this significant revenue stream for the state General Fund, cities, and counties.

The OLCC is proposing policy option package 104 to increase shipping capacity, otherwise, the current infrastructure limitations in the physical plant will hold OLCC back from meeting anticipated demand. Without action, the ten year projected liquor sales revenue at risk is $1.1 billion. The revenue at risk during the 2015-17 biennium is $75 million.

Over time, OLCC has made improvements to the distribution center, its equipment and its processes. Built in 1954, the main warehouse has seen biennium case shipments grow from 1.7 million to the projected 6.1 million in 2013-15.

One key function of the warehouse system that has not been updated since its initial installation has been the conveyor configuration to ship product to liquor stores. The primary constraint of the existing system is that all conveyer lines, including the line extension added in 2007, merge into one master line. With this configuration, liquor store orders are fulfilled one at a time and shipping can only occur through one door. This configuration creates a bottleneck and limits shipping capacity.

Option A: The agency is requesting a capital expenditure appropriation of $5.02 million to modernize the conveyor system to allow for simultaneous order fulfillment and shipping through multiple doors. This will allow for increased through put of products utilizing existing staff. This investment will increase shipping capacity through the addition of additional conveyors and software used to merge, identify and separate products at the point of shipping. Multiple orders will be able to be filled at the same time by staff compared to the current system that fulfills one order at a time. The investment will increase the productivity of existing staff and is estimated to increase shipping capacity up to 140% .This investment will take one year to install and pay for itself within one and a half months after installation.

Option B: The warehouse will add 14 additional workers to the swing shift and widen the shipping window from 12 hours to 14 hours. This will have the impact of increasing the estimated shipping capacity from 3 million cases per year to 3.4 million cased per year. This option is expected to offset forecast demand through the next two biennia but still leaves the OLCC in a position of having to install an “Option A-type” solution to meet demand and preserve revenue. Option B will cost $1.8 million in the 2015-17 biennium with ongoing costs of $1.6 million per biennium.

An analysis of net present value indicates that Option A to expand the current conveyor system has the highest value in offsetting gross liquor revenue at risk compared to Option B, adding additional labor. A $5 million investment into the OLCC warehouse will pay for itself by October 2016.

Purpose and Background

The Oregon Liquor Control Commission focuses on producing and growing stable revenue for the support of public programs. Its stewardship of sales of liquor and collection of malt and wine privilege taxes are optimized to protect the long-term stability of this significant revenue stream for the state General Fund, cities, and counties. The Oregon Liquor Control Commission's management of liquor sales and beer and wine privilege taxes produces the third largest source of revenue for the State of Oregon with a biennial value of over $1.16 billion.

In the 2013-15 biennium the OLCC is projected to distribute $441 million to the state general fund, cities, counties and mental health for vital services. The distribution formula as defined by statute dedicates 56 percent of the revenue to the General Fund, 20 percent to cities, 14 percent to city revenue sharing, 10 percent to counties, and 50 percent of the privilege tax revenue to Mental Health.

The Agency Request Budget assumes that the budget process will provide the necessary resources for the OLCC to meet expected demand for spirits in the next biennium; however without the necessary investment in the Distilled Spirits Program, the OLCC estimates that as much as $14.7 million of the projected gross revenues could be at risk in 2015, $28.8 million at risk in 2016, and $46.4 million at risk in 2017 ($75.2 million in the 2015-17 biennium) should OLCC not be able to meet demand due to constraints of the existing distribution center configurations. The ten year forecast for revenue at risk in the next ten years is $1.1 billion. In the Distilled Spirits Program the OLCC is proposing policy option package #104 – "Increase OLCC Shipping Capacity" to address the potential risk to revenue. Option A of package #104 is a one-time investment in machinery and technology and Option B adds staff.

Problem Description

The OLCC is proposing policy option package 104 to increase shipping capacity, otherwise, the current infrastructure limitations in the physical plant will hold OLCC back from meeting anticipated demand. Without action, the ten year projected liquor sales revenue at risk is $1.1 billion.

Revenue at Risk

With current resources OLCC projects that demand for liquor is currently exceeding the ability of the warehouse to fulfill orders and meet current demand for spirits. Table 1 presents a forecast of revenue over the next ten years and an estimate of revenue at risk (gross sales) if current resource levels remain the same.

Over the next ten years, OLCC estimates that $1.1 billion in gross liquor sales could be at risk or $75 million during the 2015-17 biennium due to the inability of the warehouse to fulfill liquor orders in a timely manner.

Table 1. Projection of Demand and Sales with Revenue at Risk Due to Shipping Capacity Limitations

Fiscal Year	Actual and Forecast Liquor Case Demand	Actual and Forecast Gross Revenue Per Case	Actual and Forecast Total Gross Revenue	Shipping Limit With Current FTE and Truck Schedules	Projected Shipping Case Deficit	Projected Revenue At Risk If Current Resources Remain Unchanged
2001	1,763,159	$ 137.37	$ 242,205,332			
2002	1,812,009	$ 140.43	$ 254,465,529			
2003	1,889,240	$ 141.79	$ 267,868,926			
2004	2,014,098	$ 143.52	$ 289,072,121			
2005	2,108,035	$ 146.76	$ 309,367,036			
2006	2,295,797	$ 150.14	$ 344,691,987			
2007	2,431,531	$ 154.30	$ 375,173,692			
2008	2,551,732	$ 157.47	$ 401,814,302			
2009	2,572,865	$ 160.78	$ 413,666,000			
2010	2,573,935	$ 163.24	$ 420,158,672			
2011	2,676,106	$ 163.77	$ 438,265,953			
2012	2,791,591	$ 166.72	$ 465,418,338			
2013	2,911,100	$ 170.94	$ 497,621,914			
2014	2,969,701	$ 172.68	$ 512,813,160			
2015	3,030,771	$ 179.61	$ 544,351,960	2,948,755	-82,016	$ (14,730,682)
2016	3,113,848	$ 174.34	$ 542,864,050	2,948,755	-165,093	$ (28,782,063)
2017	3,216,060	$ 173.27	$ 557,253,630	2,948,755	-267,305	$ (46,316,500)
2018	3,309,430	$ 179.65	$ 594,541,193	2,948,755	-360,674	$ (64,795,366)
2019	3,385,030	$ 183.09	$ 619,754,631	2,948,755	-436,275	$ (79,876,172)
2020	3,439,702	$ 186.66	$ 642,059,374	2,948,755	-490,946	$ (91,640,717)
2021	3,541,008	$ 190.30	$ 673,839,919	2,948,755	-592,252	$ (112,703,294)
2022	3,643,370	$ 193.98	$ 706,740,477	2,948,755	-694,615	$ (134,741,274)
2023	3,747,054	$ 197.71	$ 740,829,590	2,948,755	-798,299	$ (157,831,593)
2024	3,845,227	$ 200.73	$ 771,870,350	2,948,755	-896,472	$ (179,952,972)
2025	3,945,972	$ 203.81	$ 804,211,717	2,948,755	-997,217	$ (203,238,500)
				10 Year Projected Liquor Sales Revenue at Risk		$ (1,099,878,450)

Historical Distribution Center Improvements

Over time, OLCC has made improvements to the distribution center, its equipment and its processes. Built in 1954, the main warehouse has seen biennia case shipments grow from 1.7 million to the projected 6.1 million in 2013-15. To accommodate decades of growth, periodically the OLCC has made improvements:

- Warehouse expansion (1979, 2007)
- Installation of additional conveyors (1972, 2007)
- Purchase of handling equipment (ongoing)
- Installation of storage racking (ongoing)
- Installation of a Warehouse Management Software system (WMS, 2002) to maximize efficiencies in storage and shipping

Shipping Capacity

Conveyer configuration constraints - One key function of the warehouse system that has not been updated since its initial installation has been the conveyor configuration to ship product to liquor stores. The primary constraint of the existing system is that all conveyer lines, including the line extension added in 2007, merge into one master line. With this configuration, liquor store orders

are fulfilled one at a time and shipping can only occur through one door. This configuration creates a bottleneck and limits shipping capacity.

Shipping window constraints - The average shipping window for OLCC product is 12.2 hours per day, which allows for same day delivery for local stores and next day delivery for stores outside of the Portland region. The shipping window is constrained by the need for the inventory management, replenishment of stock, and ordering information systems to process information between 9 p.m. and 6 a.m. without interruption. This means that product cannot be shipped or received between those hours.

Annual capacity - Given the conveyer configuration, the shipping window constraints, and the number of current warehouse personnel, the warehouse can process and ship 940 cases per hour for about 12 hours per work day. The combination of the single shipping door with the constraints on the shipping and delivery windows establishes an annual capacity maximum of 3 million cases per year.

Demand exceeds capacity- The OLCC warehouse received, stored and shipped 2.95 million cases of spirits during fiscal year 2014. Demand for spirits in Oregon is forecast to grow at an annual rate of 2.6 percent per year over the next 10 years and reach an annual shipping volume of 3.7 cases by 2023. Even with additional staff, however, it is expected that the demand for spirits will exceed the shipping capacity for the OLCC warehouse in the next biennium.

Shipping Data - Table 2 presents the actual monthly shipping data for Fiscal Year 2014.

Table 2. Shipping Data for Fiscal Year 2014

Month Year	Average Shipping Start Time	Average Shipping End Time	Average Shipping Hours Per Day	Average Cases Shipped Per Hour	Number of Days Worked	Total Cases Shipped	Total Cases Sold	Gross Sales
Jul-13	7:10 AM	7:07 PM	12.0	981.6	22	257,960	258,191	$ 44,295,257
Aug-13	7:10 AM	6:36 PM	11.4	986.6	23	259,040	262,551	$ 46,117,139
Sep-13	7:10 AM	6:42 PM	11.5	981.3	20	225,677	224,011	$ 39,186,720
Oct-13	6:59 AM	7:13 PM	12.2	960.6	23	269,374	244,782	$ 42,657,277
Nov-13	6:10 AM	6:58 PM	12.8	951.1	20	243,560	254,437	$ 45,375,659
Dec-13	6:10 AM	7:42 PM	14.6	953.8	22	307,067	317,457	$ 58,111,958
Jan-14	6:52 AM	5:06 PM	10.2	898.2	22	202,202	217,662	$ 37,556,102
Feb-14	7:11 AM	5:50 PM	12.0	903.7	18	194,000	214,031	$ 38,088,569
Mar-14	7:10 AM	7:22 PM	12.2	894.1	21	228,459	233,968	$ 41,283,881
Apr-14	7:35 AM	7:11 PM	11.6	905.3	23	241,383	228,000	$ 40,861,695
May-14	7:10 AM	7:33 PM	12.4	908.0	22	246,834	255,430	$ 44,843,697
Jun-14	7:11 AM	8:13 PM	13.0	949.2	21	259,138	244,833	$ 41,685,786
Average	**7:00 AM**	**7:00 PM**	**12.2**	**939.5**				
				Total	**257**	**2,934,694**	**2,955,353**	**$ 520,063,739**

The data in Table 2 reflects how demand can fluctuate through the year but some parameters such as hours of shipping per day and average number of cases shipped per hour remains somewhat constant. High demand for spirits can be somewhat managed through the use of seasonal employees and overtime which can lead to variance in shipping hours and cases shipped per hour.

The table also reflects how the shipping window has already started to widen due to increased demand even within the fiscal year. During July 2013 the average shipping window was 12 hours per day but during July 2014 the average shipping window has increased to 13 hours per day.

Warehouse managers have been able to hire temporary workers and provide for extra overtime to temporarily mitigate the capacity shortfalls during times of high demand but a permanent solution is needed to accommodate the increasing demand for spirits. The potential impacts of lack of distribution capacity includes untimely deliveries leading to out-of stock situations, and lost sales which can result in consumer dissatisfaction and hardships for private businesses such as restaurants and bars.

Shipping Limitations with Current Warehouse FTE

Shipping of product is limited by labor and operational factors. Currently the OLCC uses an average of 47.5 FTE to receive, store and ship product. Those FTE are able to ship an average of 12.2 hours per day. (Other times of the day are spent receiving product, restocking racks, preparing shipments for the next day, and general facility maintenance.)

Table 3 estimates the current shipping capacity with the current FTE budgeted for the warehouse. Maximum shipping capacity of 3 million cases per year is expected to be reached in Fiscal Year 2014 and will be exceed in Fiscal Year 2015.

Table 3. Shipping Capacity Estimate with Current FTE

Estimated Shipping Capacity With Current Warehouse Staffing and Conveyor System		
Average Shipping Window Hours	12.21	Shipping capacity was maximized during for Fiscal Year 2014 at 3 million cases per year with current resources. The result has been increasing shipping resources and a leveling off in the average number of cases that can be shipped per hour.
Cases Per Hour	939	
Working Days	257	
Case Limit	2,948,755	

OLCC estimates that with current warehouse FTE the capacity to receive, store and ship is about 3 million cases per year. Fiscal Year 2015 sales are forecast at 3.03 million cases and expected to grow by about 3 % per year over the next 10 years to 3.7 million cases by 2023.

Shipping Limitation Based on Operational Constraints

Operations of the OLCC warehouse are constrained by external factors that are not related to labor. Trucking companies that ship distilled spirits outside of the Portland Metro area need to have their trucks loaded at the warehouse by 8 pm. Trucks not loaded by this time cannot make the transfers necessary to ensure next day delivery to stores outside of the Portland Metro area. There is also a shipping constraint related to the processing of liquor orders and the current IT Warehouse Management System. Liquor orders have to be processed between 9 pm and 6 am to allow for the next day's work. The IT system cannot process shipping orders during this period because it is reconciling inventory from the previous day's shipments. This sets a maximum shipping window between 6 am and 8 pm or 14 hours. Assuming that labor is available to receive, store and ship between these hours but the shipping is constrained by the same number of work days and the 940 case per hour limit of shipping through one door then a second limitation for case shipments is estimated at 3.4 million cases per year (Table 4.)

Table 4. Shipping Capacity Estimate with Additional FTE but Constrained by Trucking and IT Limitations

Estimated Shipping Capacity with Expanded Warehouse Staff and Shipping Window		
Average Shipping Window Hours*	14	Shipping window is expanded to physical maximum of 6 am to 8 pm and warehouse staff are added to swing shift for replenishment and order fulfillment
Cases Per Hour	939.5	
Working Days	257	
Case Limit	3,380,321	
*14 Hour maximum dictated by trucking schedules and IT requirements to process orders		

The current forecast for liquor sales indicates that the warehouse will reach this capacity limit during Fiscal Year 2019.

Constraints Related to Warehouse Worker Productivity

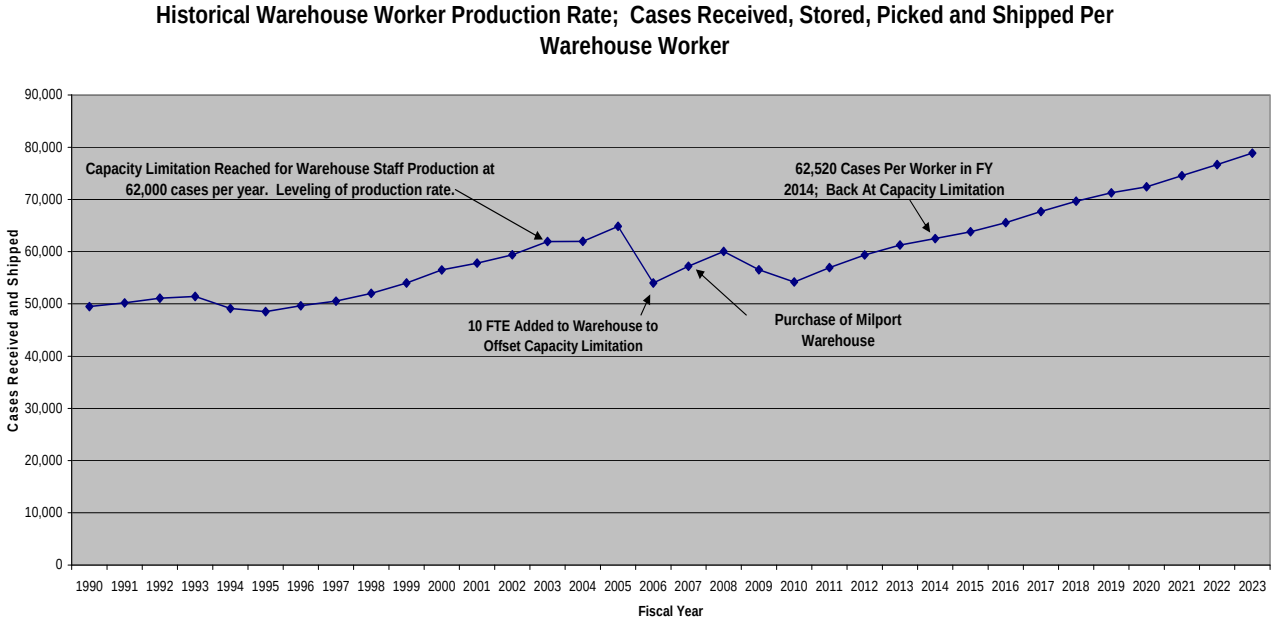
With the exception of IT upgrades related to inventory management and tracking there has been little change in basic technology to move product in and out of the warehouse. Figure 1 presents a graph of the average number of cases received, stored and shipped per warehouse worker since 1990 (Appendix 2 contains the actual data). FTE have been added periodically to meet increases in demand.

During the nineties, an average full time worker would handle about 50,000 cases per person during a year. This rate began to grow in 1998 and reached a peak of over 60,000 cases per

worker by 2005. This level of production put stresses on the labor force and warehouse capacity that allowed for the OLCC to periodically add FTE between 2005 and 2010 and achieve an average productivity per FTE between 50,000 and 60,000 cases per year.

During Fiscal Year 2014 the average cases handled per FTE reached about 63,000 cases per year which has again stressed the labor force and the ability of the OLCC to fulfill demand for spirits in Oregon.

Figure 1. Historical Average of Cases Handled Per Warehouse FTE



*Historical FTE for warehouse workers only. Seasonal and temporary positions were counted as 0.5 FTE

During the period between 2003 and 2005 worker production rates flattened at about 62,000 cases handled per worker per year and warehouse production was at risk of not meeting demand. Additional FTE were added in 2006 so that production could be maintained and demand fulfilled. Fiscal Year 2014 saw a similar level production rate similar to 2003 and the system is again in danger of not meeting demand for spirits

Alternative Analysis

Option A. Install Automated Sortation System with Additional Conveyor Capacity

Description

This option will modernize the conveyor system to allow for simultaneous order fulfillment and shipping through multiple doors. This will allow for increased through put of products utilizing existing staff. This investment will increase shipping capacity through the addition of additional conveyors and software used to merge, identify and separate products at the point of shipping. Multiple orders will be able to be filled at the same time by staff compared to the current system that fulfills one order at a time. The investment will increase the productivity of existing staff and is estimated to increase shipping capacity up to 140% (Table 5).

Table 5. Increase in Shipping Capacity with Option A

Estimated Shipping Maximum Shipping Capacity with Expanded Conveyor System and Automated Sortation		
Average Shipping Window Hours	8	Current staff maintained but now able to ship out of four doors versus one. Four orders can be filled per worker simultaneously. Shipping capacity per door is estimated at 60% of current capacity but now shipping through four doors at once improving total shipping productivity by 140%. This will allow shipping to return to the day shift 8 hour window.
Cases Per Hour	2255	
Working Days	257	
Case Limit	4,635,681	

Assumptions for Option A:

- Assumes installation of a sortation system that will allow simultaneous shipping through four doors instead of one.

- Assumes that staff will be able to stay longer at a single pick location rather than the current process of moving among multiple pick locations in order to fulfill orders one at a time.

- Assumes that staff resources will remain at the current service level but warehouse staff will be moved from the swing shift back to the day shift to accommodate shipping demand.

- Assumes that the Swing Shift will be used for product replenishment and order preparation for the following day shift (original purpose of the swing shift).

- Assumes that installation of the new system will be done in the evenings to minimize disruption to current operations.

Cost Benefit Analysis for Option A

Option A includes a $5 million capital investment in FY 2016 along with $56,000 in annual maintenance costs (inflated at 3 %) to mitigate the risk of $220 million in gross sales lost over the next two biennia.

The project will take one year to implement and pay for itself within the first month and a half after installation. Assuming the RFP is submitted in July 2015, the system will be operational by September 2016 and pay for itself by October 2016 (Table 6).

Table 6. Payback Projection for Option A

Month Year	Monthly Percent of Annual Revenue	Forecast Monthly Revenue	Forecast Monthly Revenue At Risk	Warehouse Automation Project Timeline	Expenditure	Payback Revenue	Payback Period
July-14	8.6%	$ 46,544,547	$ (1,259,539.70)				
August-14	8.5%	$ 46,476,015	$ (1,257,685.15)				
September-14	7.9%	$ 42,787,604	$ (1,157,873.26)				
October-14	8.2%	$ 44,618,212	$ (1,207,411.24)				
November-14	8.3%	$ 45,021,118	$ (1,218,314.28)				
December-14	11.5%	$ 62,844,606	$ (1,700,634.79)				
January-15	7.1%	$ 38,699,053	$ (1,047,233.16)				
February-15	7.3%	$ 39,852,073	$ (1,078,435.01)				
March-15	8.0%	$ 43,731,769	$ (1,183,423.26)				
April-15	7.8%	$ 42,391,022	$ (1,147,141.38)				
May-15	8.4%	$ 45,880,074	$ (1,241,558.43)				
June-15	8.4%	$ 45,505,867	$ (1,231,432.05)				
July-15	8.6%	$ 46,417,324	$ (2,460,996.11)	Submit RFP			
August-15	8.5%	$ 46,348,979	$ (2,457,372.54)	Close RFP			
September-15	7.9%	$ 42,670,650	$ (2,262,351.54)	Select Vendor			
October-15	8.2%	$ 44,496,254	$ (2,359,143.08)	Select Vendor			
November-15	8.3%	$ 44,898,059	$ (2,380,446.36)	Award Contract			
December-15	11.5%	$ 62,672,829	$ (3,322,845.33)	Award Contract			
January-16	7.1%	$ 38,593,274	$ (2,046,173.49)	Begin Construction	$ 627,500		
February-16	7.3%	$ 39,743,143	$ (2,107,138.31)	Construction	$ 627,500		
March-16	8.0%	$ 43,612,234	$ (2,312,273.32)	Construction	$ 627,500		
April-16	7.8%	$ 42,275,153	$ (2,241,382.69)	Construction	$ 627,500		
May-16	8.4%	$ 45,754,667	$ (2,425,862.78)	Construction	$ 627,500		
June-16	8.4%	$ 45,381,483	$ (2,406,076.98)	Construction	$ 627,500		
July-16	8.6%	$ 47,647,698	$ (3,960,269.60)	Construction	$ 627,500		
August-16	8.5%	$ 47,577,541	$ (3,954,438.50)	Complete Construction	$ 627,500		
September-16	7.9%	$ 43,801,712	$ (3,640,607.96)	System Operational			
October-16	**8.2%**	**$ 45,675,707**	**$ (3,796,366.27)**	**System Operational**		**$ (7,436,974.23)**	**Project Paid For in 1.35 Months after Completion**
November-16	8.3%	$ 46,088,163	$ (3,830,647.81)	System Operational			
December-16	11.5%	$ 64,334,084	$ (5,347,169.51)	System Operational			
January-17	7.1%	$ 39,616,258	$ (3,292,731.20)	System Operational			
February-17	7.3%	$ 40,796,606	$ (3,390,836.65)	System Operational			
March-17	8.0%	$ 44,768,255	$ (3,720,942.79)	System Operational			
April-17	7.8%	$ 43,395,731	$ (3,606,864.59)	System Operational			
May-17	8.4%	$ 46,967,476	$ (3,903,732.54)	System Operational			
June-17	8.4%	$ 46,584,401	$ (3,871,892.97)	System Operational			

The net present value if the investment is $203 million in gross revenue at risk over a four year period and $920 million (in 2016 dollars) in gross revenue at risk over a ten year period. The NPV analysis uses a 3% discount rate (Table 7) for capital projects.

Table 7 Option A Net Present Value Analysis

Fiscal Year	Capital and Maintenance Costs	Gross Sales Revenue At Risk	Net Cash Flow From Gross Sales (affects state revenues, manufacturers, liquor store agent s)	FY 2016 NPV For Gross Sales
2016	$ 4,964,450	$ 28,782,063	$ 23,817,613	$ 23,817,613
2017	$ 55,550	$ 46,316,500	$ 46,260,950	$ 44,913,544
2018	$ 56,084	$ 64,795,366	$ 64,739,283	$ 61,022,983
2019	$ 57,217	$ 79,876,172	$ 79,818,955	$ 73,045,651
2020	$ 57,766	$ 91,640,717	$ 91,582,951	$ 81,370,265
2021	$ 58,933	$ 112,703,294	$ 112,644,361	$ 97,168,015
2022	$ 59,535	$ 134,741,274	$ 134,681,739	$ 112,793,836
2023	$ 60,701	$ 157,831,593	$ 157,770,892	$ 128,282,173
2024	$ 61,284	$ 179,952,972	$ 179,891,688	$ 142,008,160
2025	$ 62,522	$ 203,238,500	$ 203,175,978	$ 155,717,469
		Option A NPV Analysis		
	Discount Rate	4 Year Net Present Value	10 Year Net Present Value	
	3.0%	$ 202,799,791	$ 920,139,709	Gross Sales

Risks for Option A

- Installation of the new system could affect shipping capacity resulting in late shipments and lost revenue during a part of Fiscal Year 2016.
- Temporary labor resources may be needed during the last of Fiscal Year 2016 to offset revenue at risk during the installation phase of the system.
- Demand for product could increase more than forecast requiring additional temporary to fulfill orders.
- Anticipated increases in shipping capacity are not fully realized requiring some additional FTE.
- Privatization could pass; however, the investment will have paid for itself by October 2016.

Solution Requirements for Option A (also see Appendix E for additional details on upgrade)

Increase OLCC Shipping Capacity Option A – Upgrade Equipment

2015-17 Agency Request Policy Option Package No. 104

July 2015	RFP released to the public
August 2015	RFP closes, proposals evaluated
September 2015	Vendor selection
November 2015	Contract signed and awarded
January 2016	Construction begins
August 2016	Construction completed

	One-time Costs	Ongoing Costs	Total 2015-17
Option A, Upgrade Equipment			
Personal Services	$0	$0	$0
Services & Supplies			
Maintain and repair equipment (Supplies and parts such as motors, rollers, belts)	$0	$20,000	$ 20,000
Licensing and maintenance of RIMS software expansion	$ 0	$90,000	$90,000
Total Services and Supplies	$ 0	$110,000	$110,000
Capital Outlay			
Construction/project management	$4,486,000	$0	$4,486,100
Forklift	$45,000	$0	$45,000
Software upgrades for RIMS	$222,200		$222,200
Computer hardware upgrades	$156,700	$0	$156,700
Total Capital Outlay	$4,910,000	$0	$4,910,000
Total Option A Upgrade Equipment	$ 4,910,000	$110,000	$5,020,000

Alternative Analysis

Option B. Add FTE to the swing shift and widen shipping window (6 am to 8 pm)

Description

The warehouse will add 14 additional workers to the swing shift and widen the shipping window from 12 hours to 14 hours. This will have the impact of increasing the estimated shipping capacity from 3 million cases per year to 3.4 million cased per year (Table 8)

Table 8. Estimated Shipping Capacity with Added FTE

Estimated Shipping Capacity with Expanded Warehouse Staff and Shipping Window		
Average Shipping Window Hours*	14	Shipping window is expanded to physical maximum of 6 am to 8 pm and warehouse staff are added to swing shift for replenishment and order fulfillment
Cases Per Hour	939.5	
Working Days	257	
Case Limit	3,380,321	
*14 Hour maximum dictated by trucking schedules and IT requirements to process orders		

This option is expected to offset forecast demand through the next two biennia but still leaves the OLCC in a position of having to install an "Option A type" solution in the future. Table 9 shows the revenue at risk over the next ten years with Option B.

Table 9. Projection of demand and sales with revenue at risk for Option B

Fiscal Year	Actual and Forecast Liquor Case Demand	Actual and Forecast Gross Revenue Per Case	Actual and Forecast Total Gross Revenue	Shipping Limit With Current FTE and Truck Schedules	Projected Shipping Case Deficit	Projected Revenue At Risk If Current Resources Remain Unchanged		Option B : Shipping Limit Expanded FTE and Truck Scheduling	Option B Case Deficit	Option B Revenue At Risk
2001	1,763,159	$ 137.37	$ 242,205,332							
2002	1,812,009	$ 140.43	$ 254,465,529							
2003	1,889,240	$ 141.79	$ 267,868,926							
2004	2,014,098	$ 143.52	$ 289,072,121							
2005	2,108,035	$ 146.76	$ 309,367,036							
2006	2,295,797	$ 150.14	$ 344,691,987							
2007	2,431,531	$ 154.30	$ 375,173,692							
2008	2,551,732	$ 157.47	$ 401,814,302							
2009	2,572,865	$ 160.78	$ 413,666,000							
2010	2,573,935	$ 163.24	$ 420,158,672							
2011	2,676,106	$ 163.77	$ 438,265,953							
2012	2,791,591	$ 166.72	$ 465,418,338							
2013	2,911,100	$ 170.94	$ 497,621,914							
2014	2,969,701	$ 172.68	$ 512,813,160							
2015	3,030,771	$ 179.61	$ 544,351,960	2,948,755	-82,016	$ (14,730,682)		3,380,184		
2016	3,113,848	$ 174.34	$ 542,864,050	2,948,755	-165,093	$ (28,782,063)		3,380,184		
2017	3,216,060	$ 173.27	$ 557,253,630	2,948,755	-267,305	$ (46,316,500)		3,380,184		
2018	3,309,430	$ 179.65	$ 594,541,193	2,948,755	-360,674	$ (64,795,366)		3,380,184		
2019	3,385,030	$ 183.09	$ 619,754,631	2,948,755	-436,275	$ (79,876,172)		3,380,184	-4,846	$ (887,159.71)
2020	3,439,702	$ 186.66	$ 642,059,374	2,948,755	-490,946	$ (91,640,717)		3,380,184	-59,517	$ (11,109,580.18)
2021	3,541,008	$ 190.30	$ 673,839,919	2,948,755	-592,252	$ (112,703,294)		3,380,184	-160,823	$ (30,604,023.52)
2022	3,643,370	$ 193.98	$ 706,740,477	2,948,755	-694,615	$ (134,741,274)		3,380,184	-263,186	$ (51,052,711.65)
2023	3,747,054	$ 197.71	$ 740,829,590	2,948,755	-798,299	$ (157,831,593)		3,380,184	-366,870	$ (72,533,810.18)
2024	3,845,227	$ 200.73	$ 771,870,350	2,948,755	-896,472	$ (179,952,972)		3,380,184	-465,043	$ (93,350,204.63)
2025	3,945,972	$ 203.81	$ 804,211,717	2,948,755	-997,217	$ (203,238,500)		3,380,184	-565,788	$ (115,310,782.70)
				10 Year Projected Liquor Sales Revenue at Risk		$ (1,099,878,450)		10 Year Projected Liquor Sales Revenue at Risk		$ (374,848,272.56)

Assumptions for Option B

- Assumes that 14 FTE will be added to the swing shift including equipment operators and new fork lifts.

- Assumes that shipping companies will allow for extension of the OLCC shipping window from 6 am to 8 pm from the current shipping window of 7 a.m. to 7 p.m.

Cost Benefit Analysis for Option B

Option B includes a $1 million investment in Fiscal Year 2016 for labor and equipment and then and ongoing annual labor costs of about $800,000 per year. The option offsets the revenue at risk over the next 4 years but still result in an estimated $394 million in revenue at risk after Fiscal Year 2018 through Fiscal Year 2025.

Option B resulted in a Net Present Value of $201 million for gross sales return for the next four years and $600 million in gross sales return over a ten year period.(Table 10).

Table 10. Option B Net Present Value Analysis

Fiscal Year	Capital and Maintenance Costs	Gross Sales Revenue At Risk Under Present Condition	Revenue at Risk Offset By Additional Labor Additon with Expanded Shipping Capcity	Revenue at Risk Mitigated By Increased Labor	Net Cash Flow From Gross Sales (affects state revenues, manufacturers, liquor store agent s)	FY 2016 NPV For Gross Sales
2016	$ 1,045,275	$ 28,782,063		$ 28,782,063	$ 27,736,788	$ 27,736,788
2017	$ 797,725	$ 46,316,500		$ 46,316,500	$ 45,518,775	$ 44,192,985
2018	$ 833,730	$ 64,795,366		$ 64,795,366	$ 63,961,637	$ 60,289,977
2019	$ 866,824	$ 79,876,172	$ (3,497,126)	$ 76,379,046	$ 75,512,222	$ 69,104,380
2020	$ 906,043	$ 91,640,717	$ (13,770,501)	$ 77,870,215	$ 76,964,173	$ 68,381,671
2021	$ 942,061	$ 112,703,294	$ (33,316,759)	$ 79,386,535	$ 78,444,474	$ 67,666,893
2022	$ 984,782	$ 134,741,274	$ (53,817,961)	$ 80,923,313	$ 79,938,531	$ 66,947,261
2023	$ 1,023,985	$ 157,831,593	$ (75,352,231)	$ 82,479,362	$ 81,455,377	$ 66,230,675
2024	$ 1,070,524	$ 179,952,972	$ (96,211,745)	$ 83,741,227	$ 82,670,703	$ 65,261,016
2025	$ 1,113,197	$ 203,238,500	$ (118,216,103)	$ 85,022,398	$ 83,909,201	$ 64,309,415
	Discount Rate	Option B NPV Analysis				
	3.0%	4 Year Net Present Value	10 Year Net Present Value			
		$ 201,324,130	$ 600,121,061	Gross Sales		

Option B Risks

- Trucking companies may add additional costs to modify hours.
- Increases above forecast in demand for liquor sales may not be fulfilled with this option.
- Increasing the number of personnel on swing shift may increase the incidence of accidents resulting in risk to personnel and potential additional agency costs.
- Option A investment will likely be required in Fiscal Year 2018 to mitigate the risk to revenue.

Solution Requirements for Option B (Add FTE)

		One-time Costs	Ongoing Costs	Total 2015-17
Personal Services				
Liquor Equipment Operators	3 FTE		$ 319,806	$ 319,806
Liquor Distribution Worker 1	9 FTE		936,756	936,756
Liquor Distribution Worker 2	2 FTE		219,478	219,478
Total Personal Services	14 FTE		1,476,040	1,476,040
Services & Supplies				
Associated with additional staff		84,000		84,000
Maintenance and system upgrades for their scanners		5,000		5,000
Total Services and Supplies		89,000		89,000
Capital Outlay				
Forklifts		90,000		90,000
Yard goat to move trailers between warehouses		130,000		130,000
Inventory transport carts		16,000		16,000
Handheld scanners		37,000		37,000
Rapid battery charger		4,960		4,960
Total Capital Outlay		277,960	0	277,960
Total Option B, Add Staff		$ 277,960	$ 1,565,040	$ 1,843,000

Comparison of Options A, B and A/B Combined

Table 11 compares Net Present Value for the two options. A net present value for a combination of the options is also calculated where Option B is done through Fiscal Year 2017 and Option A is installed in Fiscal Year 2018 to mitigate the second shipping capacity limitation.

Option A (Expand Conveyor System) has the highest net present value when revenues and costs are discounted over the next four years with a $1.5 million advantage over Option B (FTE).

Option A (Expand Conveyer System) has the highest net present value when revenues and costs are discounted over the next ten years with a $320 million advantage over Option B (FTE).

Option A (Expand Conveyer System) has the highest net present value when revenues and costs are discounted over the next four and ten years with a $1.4 million advantage over Options A/B Combined.

Table 11. Comparison of Net Present Value for Option A, Option B, and Options A/B Combined

Option	NPV for 4 Years For Gross Revenue	NPV for 10 Years for Gross Revenue
A (Expansion)	**$202,799,791**	**$920,139,709**
B (FTE)	$201,324,130	$600,121,061
A/B Combined	$201,373,326	$918,721,916

Conclusion and Recommendation

Option A (Expand Conveyor System with Sortation) has the highest present value in a four and ten year investment frame for mitigating gross liquor sales that are put at risk due to limitations on shipping capacity. Gross liquor sales are important to manufacturers, liquor store owners, bars, and restaurants and the state's general fund. A modernized distribution system in the OLCC warehouse will preserve revenue to the state and the economic health of alcohol related businesses.

Adding FTE to the swing shift could solve the capacity issue through the next biennium but has a lower return on investment. The best short and long term solution for Oregon's liquor distribution system is Option A's capital investment into the warehouse as it presents $1.4 million dollars in "savings" for the same outcome as the second best solution of Options A/B Combined. Option B (FTE) is a $320 million inefficiency to produce the same output and outcome.

Consequences of Failure to Act

Failure provide some level of investment in the OLCC warehouse will put the system at risk and the revenues it generates for the state of Oregon at risk both in the short and long term. Multiple industries and sectors of employment rely on the OLCC distribution system for spirits. A failure to modernize the OLCC warehouse will also put increasing pressures on warehouse workers potentially leading to health and safety issue. Shipments of liquor that are delayed or are not fulfilled in a timely manner will result in increased pressure from industry, liquor store owners, restaurants and others on the Commission and Oregon leadership.

Appendices

A. **Description of Current Warehouse Operation**
B. **Q&A**
C. **Option A Project Budget Estimate**
D. **Warehouse FTE and Production History**

Appendix A. Description of Current Warehouse Operation

The OLCC Distribution center utilizes 50 warehouse employees FTE to receive, store and ship approximately 3 million cases of liquor per year. The employees consist of 45 full time warehouse workers and equipment operators and 5 seasonal employees that work during times of the year when there is peak workload. All workers are represented (ASCME). About half the workers require a CDL (Commercial Driver's License) as a condition of employment. There is also a requirement for random drug testing as a condition of possessing a CDL. The distribution center work is strenuous and requires workers to be in good physical condition. Distribution center workers must also be conscientious and trustworthy due to the type of product they are handling. Hiring and retaining qualified permanent workers is an ongoing challenge.

The employees are divided into two shifts to accomplish this mission. The primary shift works from 7:00 am to 3:30 pm and consists of 34 permanent positions and 3 seasonal positions that work during the peak shipping seasons. This shift receives most of the product coming into two warehouse facilities, stores the product and ships product.

The second shift or "swing shift" employees consist of 11 permanent positions and 2 seasonal positions and works from 3:30 pm to 12:00 midnight. The swing shift continues receiving and shipping products into the early evening but spends most of their time staging or preparing shipments for the next day. This consists of picking products and assembling them near one of the primary conveyor belts. The swing shift was added in 2005 to accommodate increasing volume of shipments.

Several conveyors are spaced through the warehouse; workers pick cases of products and place them on the conveyors. The current system only allows the warehouse to pick one order at a time meaning that workers must wait for the order to be completed before starting the next order. It also means a lot of traveling around the warehouse to find product to fill the given order. The conveyors converge at one central point where they go through the RIMS warehouse management system. This system scans, records, photographs and ensures that the orders are accurate before being loaded into the trucks. The proposed sortation system would allow workers to pick many orders at the same time and allow for loading of trucks through 3 to 4 different doors at the same time.

The Repack Unit hand sorts and puts together partial cases for orders. OLCC carries over 4,000 different products and a large portion are not ordered by the full case. They must be picked and

combined with other products prior to shipping. These products are added to the full case shipments at the loading point.

FTE workloads can be adjusted according to seasonal need. In March the distribution center was at 43 workers (slow period) but during November the center was back up to 51 workers. It must also be noted that resources must be distributed to account not just for shipping but also receiving. Most of the 300,000 plus cases that are shipped in December must be received and stored in October and November so there is need for a full level of personnel during those months as well. August 2014 saw the distribution center reach an average of 50 workers on the floor to respond to shipping level that has not been seen since the previous December.

Appendix B. Q & A

The following are questions that have been asked relate to Option A Increasing Warehouse Shipping Capacity by installing an automated sortation system with additional conveyor capacity

Q: Why not hire more people? Why not extend the December peak hiring to additional months?

A: While it is possible to hire more people in the short term, additional labor and equipment resources will only go so far in resolving the "through put issues" due to the bottleneck created by the exiting conveyer configuration and constraints in the shipping window, including the time required for inventory management and ordering information systems processing. The warehouse staff will still only be able to ship through one door at a time, which limits the amount of product that can be loaded during a work period.

Option B increases the current swing shift into a full shift by adding 14 employees. The potential cost of this option is approximately $1.8 million in additional expenditure for the 2015-17 biennium. This includes costs for additional equipment and forklift charging stations to run a full second shift.

This option offsets some revenue at risk in the short term but still results in an estimated loss of $374 million over the next ten years.

Q: What length of workday and workweek was required to achieve the 307,842 cases sold in December 2011?

A: During December of 2011, the distribution center shipped 22 days with an average shipping day length of 11.52 hours. Seven of the 22 days were 12 hours or more with two days extending to 14.5 hours. During December of 2013, the distribution center shipped 22 days with an average day length of 14.6 hours for a volume of 317,457 cases sold.

It should also be noted that December is not the only month the distribution center prepares for the holiday season. For the three months of Oct., Nov. and Dec. 2011 (64 ship days) a total of 761,526 cases shipped for a daily average of 11.25 hours. For comparison, in Oct., Nov. and Dec. 2013(65 shipping days) a total of 820,001 cases shipped for a daily average of 13.2 hours. All these shipments must also be received and stored requiring additional seasonal resources. Adding additional shipping lines and software will allow the workers doing the shipping to become more productive allowing allocation of work resources to the receiving, storage and repack areas.

October, November and December are the high stress months for the distribution center operation. Operation at this level does have adverse impacts on the workers and the equipment while the down periods during January through March have historically been used to revitalize both. Continually operating at this high of a level without additional resources would have negative impacts on people and equipment. Holiday season sales (Oct, Nov, Dec.) were 760,270 cases in 2011, 808,155 cases in 2012 and 816,676 cases in 2013. Shipping capacity demand has

increased 7% over the last two years leading to increased overtime and extension of the shipping window.

Q: Did the warehouse staff work any weekend hours?

A: Yes, the warehouse staff works weekends during the holiday season to make up for a holiday, accommodate demand, or to complete the picking of Repacks and catch up on storage tasks that did not get completed because swing shift's resources were spent on shipping. This requires additional crews and overtime. The weekends are included in the days worked data.

Q: What problems, if any, would occur with operating the warehouse and shipping product on one weekend day (presumably Saturday) every week?

A: The proposal would spread OLCC's shipping time but would potentially impact stores and add costs. Shipments are scheduled on a weekly basis for each store. The store has a set day for submitting their order and a set day for delivery on weekdays during normal operating hours. Fridays and Saturdays are the busiest days of the week for liquor stores. Shipping on a Saturday would require stores to take deliveries on the busiest sales day of the week and add additional overtime expense for the truck line personnel. Under this scenario stores could conceivably be required to receive two trucks in a day. Shipments on Friday and Saturday could both arrive at the store on Monday. Asking truck companies to work on Saturday could also increase shipping costs to OLCC.

Q: Do trucks pick up shipments outside of the 7 a.m. to 7 p.m. (weekday) time period?

A: Yes, however most of the shipments outside of the 7a.m. to 7 pm. window are for out of town shipments that will be delivered the next day. Shipments later than 8:00 p.m. cannot be guaranteed for the next day.

Q: Can the shipments be staged on the shipping dock so that multiple trucks can load shipments at a single time?

A: The swing shift has limited ability to stage shipments for the next day but trucks are still loaded one at a time. There is not enough room to pick and stage orders as was done prior to 1972 when the first conveyor system was installed. Now the orders are so large that there is not enough space on the dock. Crowding on the dock can also result in product damage.

Q: The Warehouse Data sheet shows shipping hours per day as long as 16.0 hours. Why can't that be maintained?

A: Shipping can take longer than the average of 12.2 hours and 960 cases per hour. As the number of hours grows longer, the quality of the crews supplied by the truck lines often diminishes, creating less than maximum efficiency. A 14 and 16 hour shipping day is not the norm even during December but may happen if orders get backed up or delayed. The shipping window is a fixed duration: 7 a.m. to 2 p.m. for Portland stores (same day delivery) and 2 p.m. to 7 p.m. for stores outside of Portland; the shipments outside of Portland go to overnight holding areas for next-day delivery**.** Time is required outside of the shipping window for managing inventory, replenishment of stock, and order information systems processing.

Q: How did the agency achieve this extension of shipping hours? Was additional staff hired? Did trucks continue to load outside the normal loading period?

A: In special circumstances trucks will load outside the normal loading period. Temporary employees are hired to staff the pick lines. Without additional employees, orders would not be completed.

Q: What problems are expected to occur, if any, with those longer shipping hours that would make it difficult to operate the warehouse that way more often, or potentially every workday?

A: Time is required outside of the shipping window for managing inventory, replenishment of stock, and order information systems processing. In addition, longer shipping hours will require negotiation with about a dozen current carriers to establish the additional hours. It is unknown what the trucking costs would be to expand the hours. Extension of the hours will also require experienced equipment operators to be on staff for each shift. Longer hours means more labor costs (overtime, salary and OPE). Swing shift is not staffed to the level that it can accommodate shipping for the full shift. Swing shift must complete functions that facilitate shipping and were not completed during the day shift. By putting all resources into shipping there are tasks that go unfinished and cause shipments to be delayed or sent incomplete.

Q: What is the capacity of the holding area for next-day delivery?

A: These are private trucking companies and the holding areas will vary. The holding areas are not in Portland; they are in places like Bend, Medford, Eugene and Coos Bay. Shipments must leave the Distribution Center in time to be assigned to a driver from the Portland terminal. The driver will overnight haul to the staging terminal for next morning delivery. If shipments arrive at the Portland terminal too late, an additional day is required for delivery causing potential out of stocks and additional labor costs for the agents. Most freight leaving the distribution center after 8 p.m. will not make the next day delivery.

Q: If it can accommodate additional trucks, could the warehouse day be extended?

A: Additional trucks are not the issue but rather the time to load a truck and the time necessary for managing inventory, replenishing stock, and order information shipment processing. The warehouse day can be extended but will require additional labor resources. The time to load the truck can be reduced by adding additional shipping lines and software.

Q: Do trucking companies add additional trucks in December to accommodate increased demand?

A: The number of trucks per day in December is about the same as the rest of the year. In December, however, the time to load a truck will increase and shipments will get pushed later and later into the night. If they do not get loaded in time, the delivery may be delayed a day.

Q: If trucks won't pick up outside the 7 a.m. to 7 p.m. window, why can't the current system be used to stage shipments on pallets in front of several of the many loading dock doors available in the warehouse so that multiple trucks could load at once?

A: This practice is already occurring with the swing shift. Loads are prepped for the next day shipment. However, space is limited in the warehouse and does not accommodate large scale application of this practice. Product on pallets must also be accounted for manually if they do not go through the current scanning system (RIMS), increasing the chance for error and misplaced products. Stacked pallets on the warehouse floor also become a safety hazard and get run into by forklifts increasing the rate of breakage.

Q: How will the OLCC mitigate revenue risk while the new system is installed?

A: The RFP process is expected to begin this biennium if the expenditure is approved. This includes developing specifications, contacting potential vendors and writing the RFP to be ready for submission on July 1, 2015. The agency plans to mitigate the revenue risk during this period by front-loading biennial expenses to offset the increased demand. Once the system is installed, the agency can then realize efficiencies that will result in budget savings to offset the higher expenditures earlier in the biennium.

Q: Why is investment in shipping lines and software (Option A) needed now?

A: It should be noted that OLCC has asked for this system in past biennia with the management's intent to have this system in place before the time of above-capacity shipments. The capacity issue has now been elevated in part due to the changes in Washington. The capacity issue is expected to get more critical as the population and demand for product grows. Adding additional staff will not meet the expected demand in the long term. Implementation delays have resulted in higher overtime costs, IT issues, and late shipments that will progressively worsen resulting in higher costs to the system and a greater impact to existing operations.

Q: If anything, wouldn't the installation of the sortation system tend to cause some down-time to the existing system, requiring some compensating extension of shipping hours or days?

A. Downtime is always a risk with a system upgrade but by not accepting the risk then nothing would ever be upgraded. OLCC has approached these types of projects before. In 1972, the first conveyor system was installed (1.4 million cases shipped). In 2002, OLCC implemented the RIMS warehouse management system to automate shipping and inventory tracking (1.8 million cases shipped). In 2007, the OLCC was allowed to purchase the Milport warehouse (2.4 million cases shipped). In 2015, we expect 3.1 million case plus to be shipped.

According to past practice, contractors responsible for installing the system will be asked to work from midnight to 7:00 am or weekends to do most of the work. The current plan is to assemble much of the sortation system at Milport while shipments will continue out of the main warehouse. Installation of the sortation system would occur during the lowest shipping months (January through April). Systems would have to be put into place that will allow the receiving, storage and shipping of product while the system is being installed. From a resource and expenditure standpoint the agency can front load biennial expense and realize efficiencies in the second year.

Q: How long will it take to repay Option A's investment in additional shipping lines and software? What if privatization passes?

A: If the agency submits the RFP in July 2015, the system will be completed in August 2016. Option A's investment of $5 million in will pay for itself within one and a half months after the system is fully installed. If privatization passes any time after October 2016, the investment will have already paid for itself (see Table 6)

The benefits of Option A goes beyond increasing case output and improving employee efficiency. The system also tracks product and records data, which serves to increase shipment accuracy and protect the accountability for state resources. This automated solution will also serve to significantly reduce incidents of human error in the shipping process.

Q: If privatization were to be passed in Oregon in a manner that OLCC warehouse operations would no longer operate, what would the salvage value of the requested sortation system be? Please explain.

A: This is unknown. The last version of a privatization initiative mandated that DAS take control of the OLCC facilities and sell them. Any value for the sortation system/conveyor upgrade investment will be included with the sale of the warehouse and the rest of the facilities. The current assessed value for the OLCC facilities per the Clackamas County Assessor was $13.3 million last year. It should be noted that Washington's warehouse was sold at about 60% of the appraised value. Should the purchasing entity continue to use the facility to ship cases then the sortation investment will have value but will be included with total sale price.

It is estimated by warehouse managers that salvage value for electronic and technical equipment will have little value; however, new conveyor salvage would be about 35 cents on the dollar. The existing conveyor system would be valued at scrap value.

Q: If the case per hour shipping volume is forecasted to increase with a new sortation system, please explain why the current staff level (specifically on the swing shift) could not be reduced.

A: Current staffing levels will be needed to handle the expected increase in demand. As demand grows, so will the need for receiving and shipping product. There is a possibility that some of the temporary or seasonal positions could be eliminated with the enhanced productivity from the new shipping system. It should be noted, however, that the system is now under stress due to the capacity issue. Installation of the new equipment may also require some extra temporary labor to accommodate for the construction. Reduction in temporary positions would not be advisable during the 2015-17 biennium given the uncertainties of a construction project.

Q: Please identify the amount of overtime and the cost of temporary workers that OLCC incurred during the 2011-13 biennium and expects to incur during the 2013-15 biennium related to shipping capacity constraints. Please list these amounts by year and by category.

See Attached spreadsheet. It should be noted that the overtime costs are not the total overtime compensation paid to warehouse workers. It is estimated that over half of the workers take comp time off in lieu of overtime payment which is not reflected in the overtime payments. It should also be noted that the warehouse overtime payments increased by 73% from Fiscal Year 2012 to Fiscal Year 2014

Q: Please explain the need for additional capital equipment under Option B. How many forklifts, yard goats, inventory transport carts, handheld scanners, and rapid battery chargers are being requested? How did you arrive at these numbers?

A: The estimates were based on based on jobs and equipment needed to fulfill the shipping, receiving and replenishment using current hourly volume and employee productivity data.

		One-time Costs	Ongoing Costs	Total 2015-17
Personal Services				
Liquor Equipment Operators	3 FTE		$ 319,806	$ 319,806
Liquor Distribution Worker 1	9 FTE		936,756	936,756
Liquor Distribution Worker 2	2 FTE		219,478	219,478
Total Personal Services	14 FTE		1,476,040	1,476,040
Services & Supplies				
Associated with additional staff		84,000		84,000
Maintenance and system upgrades for their scanners		5,000		5,000
Total Services and Supplies		89,000		89,000
Capital Outlay				
Forklifts		90,000		90,000
Yard goat to move trailers between warehouses		130,000		130,000
Inventory transport carts		16,000		16,000
Handheld scanners		37,000		37,000
Rapid battery charger		4,960		4,960
Total Capital Outlay		277,960	0	277,960
Total Option B, Add Staff		$ 277,960	$ 1,565,040	$ 1,843,000

Q: What is the current life of existing forklifts, inventory transport carts, and yard goat(s)?

A: Forklifts require battery replacement every 5 years and ongoing maintenance; they have a 10-year life expectancy. Inventory transport carts require a battery replacement every 4 years and ongoing maintenance; they have a 10 year life expectancy. 2002 Freightliners require annual maintenance and ongoing repairs; they have a 10-year life expectancy.

Q: Under Option B, there is a request is for 14 additional staff. Please explain how this staffing level was arrived at and what these positions would be doing. Please identify the number of months requested for each position.

A: Option B maximizes a swing shift staff to fulfill the later shipping, replenishment and receiving needs. The Liquor Equipment Operators would be needed to work the Milport facility to receive later in the evening and replenish inventory in the main warehouse. The Liquor Distribution Worker 1s would be needed for conveyor pick line and repack picking. The Liquor Distribution 2s would be needed to transport product between warehouse facilities and receiving of inbound freight.

Q: Under Option B, would there be a phase-in (ramp up) of these positions over time as shipping capacity increased? Please explain.

A: There would be no phase-in time. This is an immediate need for 2015, which will only get more drastic by 2016.

Appendix C:

Project Budget Estimate

Project:	***OLCC Budget Estimate***		**Estimate Date:**	***3.10.09***
P.M.:	***Steve Ponce***			Revised 03/03/14

Cost Code	*Line Item Description*		*Line Item Amount*	*Category Total*
1000	**Site Costs**			
1001	Site Purchase		**0.00**	
1002	Due Diligence Costs		**0.00**	
1003	Closing Costs		**0.00**	
1004	Taxes		**0.00**	
1005	Other		**0.00**	
			1000 TOTAL:	**$0.00**
2000	**Professional Services**			
2001	**Architectual & Engineering Basic Services**	**6.0%**	**183,492.00**	
2002	A&E Supplemental Services (of B. Services)	**5.00%**	**9,175.00**	
2003	A&E Reimbursables (Travel)- (of B. Services)	**1.50%**	**2,752.00**	
2004	A&E Reimbursables (General)- (of B. Services)	**0.75%**	**1,376.00**	
2005	*CMGC Premium*	**0.00%**	**0.00**	
2006	Security Consultant	**5.00%**	**9,175.00**	
2007	GeoTech Engineering	**0.00%**	**0.00**	
2008	Environmental Engineering	**0.00%**	**0.00**	
2009	Surveying	**2.50%**	**4,587.00**	
2010	Special Inspections/Materials Testing	**0.75%**	**22,937.00**	
2011	Architectural Space Planner	**0.00%**	**0.00**	
2012	Cost Estimating Services	**0.00%**	**In Design**	
2013	Commissioning	**0.00%**	**0.00**	
2014	Sustainability Premium	**0.00%**	**0.00**	
			2000 TOTAL:	**$233,494.00**
2500	**Project Management Services**			
2501	DAS Project Management Staff	**4.50%**	**137,619.00**	
2502	Outside Project Management	**1.00%**	**30,582.00**	
2503	OLCC Labor	**2.50%**	**76,455.00**	
2503	OLCC Temporary Purchasing Agent		**113,568.00**	
2504	1 day Sortation, controls design charrette		**3,000.00**	
			2500 TOTAL:	**$361,224.00**
3000	**Construction**			
3001	**Construction Contract**		**3,058,200.00**	
	Project Inflation (Rate % per year)	**3.00%**		
	Inflation Index To Const. Start of - 01/01/16	**4.50%**	**137,619.00**	
3002	Demolition Costs		**In Est.**	
3003	Hazardous Materials Abatement	**0.00%**	**In Est.**	
3004	Access Control	**0.00%**	**In Est.**	
3005	Voice/Data	**0.00%**	**In Est.**	
3006	General Security	**0.00%**	**In Est.**	
			3000 TOTAL:	**$3,195,819.00**
4000	**Furniture, Fixtures & Equipment**			
4001	Group 1 - Fixed		**156,800.00**	
4002	Group 2 - Movable		**0.00**	
4003	Other		**222,200.00**	
			4000 TOTAL:	**$379,000.00**
5000	**Art**			
5001	Project Art (1% of Construction)	**1.0%**	**30,582.00**	
			5000 TOTAL:	**$30,582.00**
6000	**Owner's Costs**			
6001	Plan Check, Permits, SDC's, Regulatory Fees	**2.50%**	**76,455.00**	
6002	DOE -- SEED Fees	**0.00%**	**0.00**	
6003	Legal/DOJ Costs	**0.25%**	**7,646.00**	
6004	Reproduction Costs	**0.00%**	**0.00**	
6005	Travel Reimbursement	**0.00%**	**0.00**	
6006	Moving / Equ. Relocation Costs	**3.00%**	**91,746.00**	
6007	Temporary Office/Utilities	**0.25%**	**7,646.00**	
6008	1.5 % for Solar Energy	**1.5%**	**45,873.00**	
	BOLI Fee (1/10of 1% or $7,500 Max)	**0.1%**	**3,049.00**	
			6000 TOTAL:	**$232,415.00**
	Contingency			
7000	Design Contingency	**3.0%**	**91,746.00**	
7001	Construction Contingency	**10.0%**	**305,820.00**	
7002	Freight	L/S	**35,000.00**	
7003			***6000 TOTAL:***	**$432,566.00**
			Total Project Cost Estimate:	**$4,865,100.00**
	Forklift			45,000.00
	Ongoing maintenance			20,000.00
	ongoing licensing			90,000.00
				$5,020,100.00

Appendix D: Warehouse FTE and Production History

Fiscal Year	Cases Moved Through Warehouse	Estimated FTE Responsible for Recieveing, Storage and Shipping of Liquor	Average Cases Handled Per Position
1990	1,533,776	31.0	49,477
1991	1,556,810	31.0	50,220
1992	1,533,255	30.0	51,109
1993	1,542,829	30.0	51,428
1994	1,498,626	30.5	49,135
1995	1,479,940	30.5	48,523
1996	1,514,375	30.5	49,652
1997	1,541,962	30.5	50,556
1998	1,586,610	30.5	52,020
1999	1,647,424	30.5	54,014
2000	1,723,145	30.5	56,497
2001	1,763,159	30.5	57,808
2002	1,812,009	30.5	59,410
2003	1,889,240	30.5	61,942
2004	2,014,098	32.5	61,972
2005	2,108,035	32.5	64,863
2006	2,295,797	42.5	54,019
2007	2,431,531	42.5	57,212
2008	2,551,732	42.5	60,041
2009	2,572,865	45.5	56,546
2010	2,573,935	47.5	54,188
2011	2,676,106	47.0	56,938
2012	2,791,591	47.0	59,396
2013	2,911,100	47.5	61,286
2014	2,969,701	47.5	62,520
2015	3,030,771	47.5	63,806
2016	3,113,848	47.5	65,555
2017	3,216,060	47.5	67,707
2018	3,309,430	47.5	69,672
2019	3,385,030	47.5	71,264
2020	3,439,702	47.5	72,415
2021	3,541,008	47.5	74,548
2022	3,643,370	47.5	76,703
2023	3,747,054	47.5	78,885
*Seasonal and Temp positions counted as half an FTE			

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Milport Warehouse Roof Evaluation

A survey and evaluation of the existing roof & flashing systems covering the Oregon Liquor Control Commission's Milport Warehouse located In Milwaukie, Oregon.

Presented to:

March 18, 2014

Project # R3059.02

TABLE OF CONTENTS

1. INTRODUCTION

In accordance with our proposal, dated December 10, 2013, Professional Roof Consultants, Inc. (PRC) conducted a roof evaluation of the existing roof system in place on the Oregon Liquor Control Commission (OLCC) Warehouse, located at 1777 SE Milport Road, in Milwaukie, Oregon. PRC conducted the evaluation on February 28, 2014. The purpose of the roof evaluation was to determine the construction of the existing roof systems, assess the condition of the various components in the roof system, provide recommendations for remedial activity, if required, and provide budget projections associated with our recommendations. OLCC staff provided historical information, leak history, and roof access. The observations and recommendations within this report are the opinion of Professional Roof Consultants, Inc. based on our experience and the conditions observed during our site visit.

TASKS PERFORMED

This report serves several purposes and a number of tasks were performed in order to accomplish our objectives, including the following:

1. A tour of the roof areas, to document roof system components and related flashings.
2. A tour of the interior of the building for a review of the structure and interior leak locations.
3. Interviews with OLCC maintenance personnel and administrative staff regarding leak history and historical performance of existing roof systems.
4. Review of available documentation including architectural drawings, roof replacement and repair records, and previous reports as they pertain to the roof systems in place at the facility.
5. Analyze all data and information retrieved from field investigations and determine appropriate scopes for future action regarding repair and/or replacement.
6. Establish and analyze design criteria pertinent to the roof areas covering the building.
7. Determine feasible roof system designs and membrane options.
8. Review current costs and assemble budgetary cost estimates for design options.
9. Writing and assembly of this report.

REPORT FORMAT

The information contained in this report is divided into three sections:

1. Introduction

This section, which describes the project, the report outline, tasks and procedures associated with accumulation of pertinent information, identification of reference standards, and outlines the goals and objectives of the evaluation.

2. Existing Conditions

This section includes a summary of system assemblies and existing conditions documented as part of this evaluation, along with photo documentation of various roof areas and representative conditions. The Roof Evaluation forms identify existing systems and conditions observed during the survey.

3. Recommendations

Summary of conditions observed, with conclusions drawn from our evaluation, along with recommendations for corrective action including both near term repairs and replacements. This section also includes Design criteria and system options for replacement, and with budgetary cost information.

REFERENCES

Reference material used for research and ascertaining design criteria for this investigation includes:

- National Roofing Contractors Association; The NRCA Roofing Manual – Membrane Roof Systems; 2011 Edition.
- 2010 Oregon Structural Specialty Code, based on the 2009 edition of the International Building Code, as adopted and amended by the State of Oregon.
- Sheet Metal and Air Conditioning Contractors National Association (SMACNA); Architectural Sheet Metal Manual - Sixth Edition.

CONSTRUCTION COST ESTIMATES

Budgetary cost information included within this report is considered preliminary in an effort to establish a realistic budget for the scope of work defined. The cost estimates are based upon a reasonable average of probable costs that have been applied to each location with professional judgment. All projected costs are shown in year 2014 values; any projection of costs beyond 2014 should be escalated by a factor of at least 3.5% per year. Cost estimates include roofing work only and do not include seismic or structural upgrade scopes of work that may need to be added in order to arrive at a total project budget.

2. EXISTING CONDITIONS

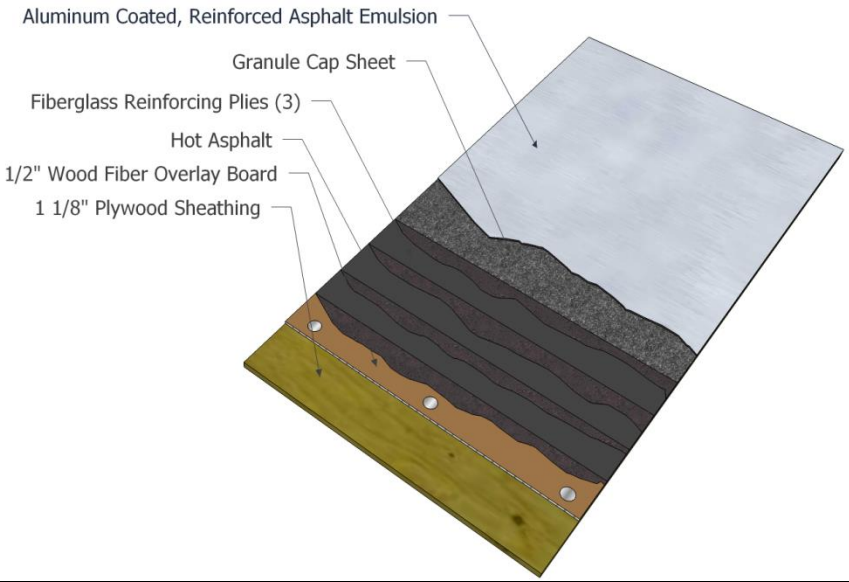
BUILDING HISTORY AND CONSTRUCTION

The Milport warehouse facility was originally constructed in 1975. It was acquired by the Oregon Liquor Control Commission in 2007. The structure is a two-story building encompassing approximately 106,668 square feet and is served by a single roof area. An exterior metal canopy located on the south perimeter of the building was not included in the evaluation as this canopy does not cover occupied interior space. The building structure consists of tilt-up concrete panels with solid wood columns supporting a framework of glulam beams and solid timber purlins. Plywood sheathing (1-1/8" thick) spans the purlins and provides the roof system substrate.

SUMMARY OF EXISTING ROOF SYSTEM

According to supplied documentation, the original roof system on the building (installed in 1975) is an asphalt built-up roof (BUR) membrane consisting of three plies of fiberglass ply sheets and a mineral cap sheet surfacing ply set in hot asphalt. Our core sampling confirmed that this construction was installed over a single layer of ½" thick wood fiber overlay board that was mechanically attached to the plywood roof sheathing using metal cap nails. In 1996, this original roof system was overlaid with a reinforced emulsion coating consisting of a polyester reinforcement mat embedded into an asphalt emulsion. The polyester reinforcement mat was then coated with a second layer of asphalt emulsion and 2" chopped fiberglass. This resulting overlay was then aluminum coated. This is the current roof configuration in service today.

EXISTING ROOF SYSTEM DIAGRAM



This roof system has had a history of ongoing leaks, and several repair attempts have been made to reduce those leaks. Repairs have reportedly been performed by both in-house maintenance personnel and commercial roofing contractors at various times over the last several years. Leaks can be attributed to the following major deficiencies:

- Deteriorated skylight domes that have large cracks in the surface as well as small spider web cracks around the perimeters.
- Delaminated membrane patches at roof drains and at the corners of the roof.
- Membrane splits occurring over the continuous joints in the insulation.

Repair attempts have included torch applied APP modified bitumen patches at roof drain locations, granule surfaced, modified bitumen patches over membrane splits, various elastomeric sealant and self-adhered flashing tape applications to skylight domes, and cold-applied mastic patches at skylight curb flashings. In general, the repairs have had short-term success as deficiencies have redeveloped or repair materials have dis-bonded.

Membrane Conditions

The asphalt BUR membrane is approaching the end of it useful and predictable service life. The original waterproofing asphalt is nearly 40 years old, and long-term heat aging, coupled with a loss of the volatile oils in the asphalt, have left the membrane in a brittle condition with low adhesion between the membrane plies. The 1996 emulsion application helped to extend the life of the roof and despite its advanced age is still providing reasonable service. However, our core sample revealed the underlying membrane is inflexible and fractures easily under moderate hand pressure. Gaps between the boards of the single layer of insulation concentrate stress loads on the membrane and have resulted in the development of membrane splits. As the membrane continues to age and the asphalt continues to decline, these splits are likely to proliferate and could result in significant and rapid water entry to the interior. Predicting how precipitously the membrane will decline is, at best, less than an exact science and provides significant risk.

Perimeter and Penetration Flashings

The built-up perimeter flashings have low adhesion to the substrate and have pulled away from the wall substrate at the roof corners. Repeated roof cement repairs have had limited success in sealing these breaches. Curbed penetration flashings appear functional; however, membrane conditions warrant replacement.

Roof Drainage

The roof has positive structural slope of ¼" per foot from a central ridgeline to the east and west perimeters. Four interior roof drains accommodate runoff. Through-wall scuppers were installed adjacent to the roof drains to provide overflow protection. However, the scuppers are set more than 6" above the finished roof surface; allowing significant water to accumulate before the overflow protection would be activated. A drainage calculation found the 6" drains to be sufficient to drain the roof, provided the drain lines remain unobstructed. Foliage debris rapidly accumulates on this roof given the proximity to densely wooded areas across the street.

SKYLIGHTS

The double domed, acrylic skylights were manufactured by Hillsdale Industries. They are an aluminum framed, curb mounted skylight. They appear to be original to the building construction and are in a state of decline as the acrylic domes have begun to crack. Improper application of elastomeric sealant, applied at the perimeter of the dome where it interfaces with the aluminum frame, has caused further deterioration and cracking. The manufacturer of the skylights is no longer in business, so dome repair or replacement is highly unlikely. Replacement of all of the skylights is recommended as part of any future roof replacement project.

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** A

Building: Milport Warehouse

Building No.: 01 **Location:** Milwaukie, OR **Weather:** 57°F, Scattered Clouds

Address: 1777 SE Milport Road Milwaukie, OR 97222 **Date:** 2/28/2014

GENERAL:

Area: 106,668 s.f.

Roof Deck: Plywood Sheathing
1 1/8" thick sheathing

Bldg Height: 2 story

Structure: Concrete tilt-up wall panels supporting glu lam beams and solid timber purlins.

Function: Warehouse

Const. Date: 1977

Last Roofed: 1996

Cost: $73,230

Construction cost data was obtained from historical records.

Internal Access: ◉ Y ○ N

Parapet Walls? ◉ Y ○ N **Height:** 4"- 28"

MEMBRANE: Asphalt BUR (4 ply)

The original BUR membrane consists of 3 fiberglass reinforcing plies and a granule cap sheet adhered in hot asphalt. This roof system was covered with a polyester mat reinforced asphalt emulsion which was then aluminum coated.

Surface: Emulsion Coating

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ◉ Y ○ N

INSULATION: Wood Fiber

Fastened: Mech Fastened

Thickness: 1/2"

Vapor Barrier: Bldg. felt

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

Wood fiber overlay board is mechanically fastened to plywood sheathing with cap nails. This building is currently not insulated. The existing wood fiber overlay board serves as a substrate for the roof membrane.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ◉ **Y** ○ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☒ Scupper ☐ None ☐ N/A

Four 6" dia. roof drains paired w/ overflow scuppers drain the roof. Drains are 13 1/2" cast iron construction with a 4 bolt pattern. Overflow scuppers are 13 1/2" W x 5" H. Scuppers are set

FLASHINGS:

	Material:	Seam Type:
Coping	Galvanized Steel	Drive Cleat
Wall Panels	Galvanized Steel	S-Locks
Counterflashing	Galvanized Steel	Lapped

Coping is 7 1/4" wide with 3" int. and ext. faces. Coping was installed in 10' lengths. Top face is significantly rusted.

PENETRATIONS:

Pipes (plumbing vent stacks)	Flanged Vents	Curbed Skylight
Curbed HVAC Unit	Abandoned Curbed Penetration	
Curbed Fan	Conduit (electric)	
Vent(s)	Roof Drains	

NOTES:

This orignial smooth surfaced BUR was covered with a polyester reinforced, asphalt emulsion that was surfaced with chopped fiberglass and an aluminum coating. The roof system is approaching the end of serviceable life with membrane splits developing along the joints in the single layer of insulation. Additionally, base flashing are open and APP modified bitumen membrane repairs have delaminated allowing water to enter beneath the repair membrane. Leakage has been moderate at both the roof drains and at numerous skylights where cracked acrylic domes are allowing active interior leakage. There is significant risk of widespread membrane splitting that could occur suddenly if the roof system were subjected to significant thermal shock. Replacement should be implemented as soon as possible.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1 - 2 Years Failing in areas.	1 -3 Years	3 -5 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

Photographic Documentation

Milport Warehouse – Roof Area A

1.

Overview of the roof surface looking north.

2.

The roof membrane at each of the four drain locations has been repaired/overlaid with an APP modified bitumen membrane.

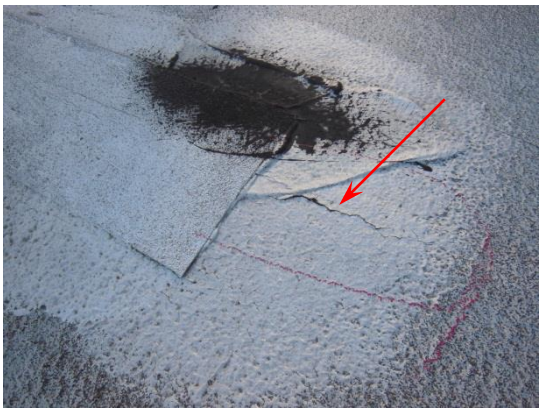
3.

Repair membrane at drain locations is disbonded and can allow water beneath repair.

4.

Previous membrane splits have been repaired with strips of modified bitumen material, and covered with aluminum coating.

5.



Membrane split has extended beyond previous repair patch.

6.

View of additional membrane splitting in the field of the roof.

7.

Core sample taken at membrane split reveals splits are occurring at joints in the single layer of wood fiber insulation.

8.

Repairs to perimeter base flashings and membrane in corners have delaminated.

9.

Skylights are failing. Several of the acrylic domes have large cracks.

10.

Improper application of elastomeric sealant at edges of acrylic domes has resulted in spider web cracking in the domes.

11.

Interior view of skylight at active leak location.

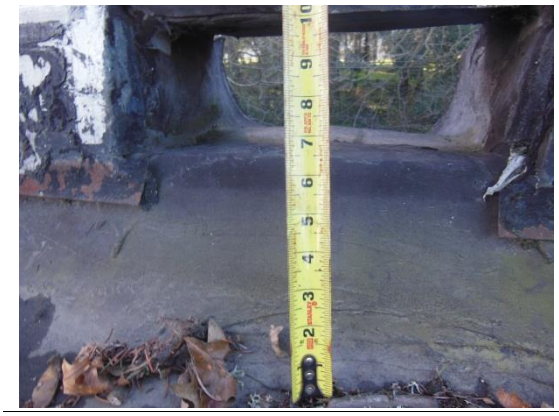
12.

Ongoing leaks have resulted in localized deck deterioration.

13.

Interior view of vertical expansion joint reveals sealant failure, as daylight is visible from the inside.

14.



Overflow scuppers are set more than 6” above the finished roof surface allowing significant accumulation of water prior to activation.

15.

Scupper inserts have been fabricated out of modified bitumen material and may allow water to track back under the flashing.

16.

Sheet metal curb cover is significantly rusted and puncture can allow water entry.

3. RECOMMENDATIONS

The existing asphalt BUR assembly in place on this facility is at the end of its useful service life. The waterproofing asphalt in the membrane is extremely brittle and fractures easily. Splitting of the membrane was observed in several areas of the roof and was documented above joints in the insulation. Deficient flashings and membrane repairs, as well as deteriorated skylights, are allowing water entry. As the membrane continues to decline, splits are likely to continue and could proliferate rapidly. Replacement of the entire roof is recommended based on the conditions observed.

DESIGN CRITERIA

There are several roof systems that could be considered for this particular project. When deciding which system will provide the best long term performance, it is important to list what criteria will have a direct impact on the performance and longevity of the system while it is in place. The following design criteria have been identified for the Milport facility.

STRUCTURE

- ✓ The roof structure is constructed of glu-lams, solid wood purlins, and plywood sheathing (1-1/8").
- ✓ Minor amounts of deteriorated plywood sheathing are known to exist in the roof and will require replacement during roof replacement.
- ✓ The building is a two-story structure and has limited access on all but the south perimeter.
- ✓ The roof area is not visible from ground level.
- ✓ The building functions as a warehouse and interior operations will not impact system selection.
- ✓ The roof has positive structural slope and will not require major upgrades to improve slope.

ROOF MEMBRANE

- ✓ Membrane splitting is contributing to water entry in the building and it is expected that some wet insulation will be encountered.
- ✓ It can be argued that two roof systems exist; eliminating the option to recover the existing assembly. PRC recommends removal of the existing system down to the plywood sheathing to remove all potentially wet insulation and to repair deteriorated sheathing.
- ✓ Wind securement and uplift standards should apply, as a minimum, to Factory Mutual standards for 1-90 acceptance or approval.
- ✓ The roof system must conform to the requirements of the Oregon Structural Specialty Code.
- ✓ A Class A fire rating is recommended.
- ✓ The roof system should be able to withstand moderate foot traffic.
- ✓ Membrane surface should allow safe and easy cleaning and removal of accumulated foliage debris.

INSULATION

- ✓ The interior space is heated to minimal levels during the winter months but no cooling is provided in the summer. Additional insulation will provide little benefit and may not be required by code.

DRAINAGE

- ✓ Structural slope is sufficient to evacuate water from the roof.
- ✓ Existing drains are adequately sized for the given roof area.
- ✓ Overflow protection is ineffective as scuppers are set well above the prescribed 2" above the finished roof surface.

- ✓ Limited use of tapered insulation to construct crickets between the drains to improve runoff is recommended.

FLASHINGS

- ✓ Wall copings and wall panels are significantly rusted and attachment is less than optimum. Replacement is recommended.

PENETRATIONS

- ✓ HVAC equipment will need to be raised in order to install proper flashings.
- ✓ Skylights are failing and should be replaced. Extension of curb heights may be required.
- ✓ Abandoned penetrations should be removed during roof replacement.

MAINTENANCE

- ✓ Roof area is routinely accessed to clear drains of debris and to service HVAC equipment.
- ✓ Significant foliage debris is deposited on the roof from surrounding wooded areas.
- ✓ There is no formal fall protection on the roof. The addition of guard rails or tie-off stanchions are recommended at exposed edges.

While this list does not eliminate all roof systems, nor does it include all possible criteria, it does produce a short list of suitable roof system assemblies for this building.

The following scope of work is recommended for replacement of this roof area regardless of the Design Option selected:

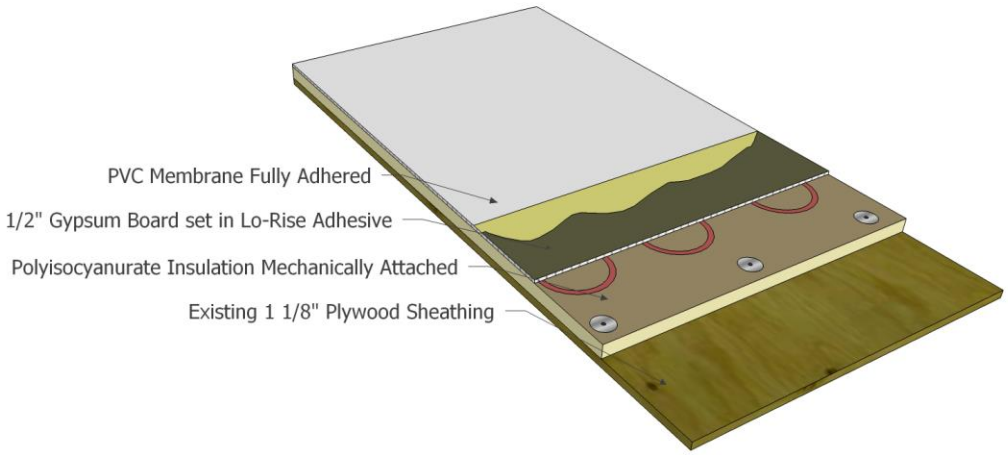
- ✓ Remove existing roof system down to the plywood deck sheathing. Inspect plywood sheathing for deterioration and replace material as required.
- ✓ Install a base layer of 2.0" Polyisocyanurate insulation, mechanically attached to the deck.
- ✓ Install a cover board, adhered to the base layer of insulation.
- ✓ Install selected membrane in full application of adhesive over substrate board.
- ✓ Install all associated perimeter and penetration flashings.
- ✓ Install 24 gauge pre-coated galvanized steel copings, counterflashings and wall panels.
- ✓ Decommission existing through-wall scuppers, infill wall, and install new cast-iron roof drains with overflow extension rings. Pipe overflow drains through existing concrete wall and install discharge escutcheons.
- ✓ Remove and replace all skylights with double domed, acrylic skylights.

The following pages present Design Options with regard to roof system selection. The options are based on criteria and standards developed for this particular building, and are presented with estimated construction cost, estimated life, and a brief comparison of advantages and disadvantages of the particular option.

ROOF SYSTEM DESIGN OPTIONS

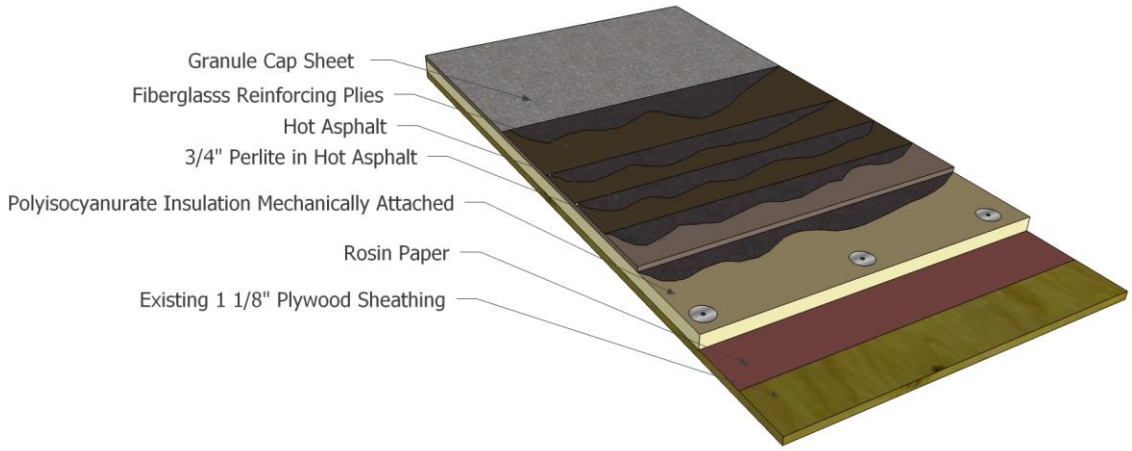
OPTION #1- 60 MIL PVC SINGLE PLY FULLY ADHERED OVER GYPSUM COVERBOARD		
Description:	***Budget:***	***Estimated Service Life:***
Install a mechanically attached layer of polyisocyanurate insulation, followed by a layer of ½" thick gypsum coverboard, adhered in lo-rise foam. Install a fully-adhered, fiberglass reinforced, PVC membrane and associated flashings and 24 gauge precoated galvanized steel flashings. Include replacement of existing skylights with new double-glazed acrylic skylights.	$1,190,000.00 106,668/SF ($11.15/ SF)	22-25 years
Advantages:	***Disadvantages:***	
1. Lower cost compared to BUR system. 2. Hot air welded seams create a monolithic continuous membrane. 3. White reflective surface minimizes solar heat gain. 4. Gypsum cover board provides a stable and highly resistant substrate for impact and puncture damage. 5. System installation requires no use of asphalt; significantly reducing fumes/odors during construction. 6. Relatively fast installation.	1. Single ply membrane lacks redundancy available in other systems. 2. Surface can be slippery when wet or icy; increasing safety risks during rooftop maintenance activities. 3. Adhesive applied systems require temperatures above 50° F. 4. Higher risk of damage due to rooftop traffic (roof/HVAC maintenance). 5. Requires specialized repair procedures using "non-standard" materials.	

ROOF SYSTEM CROSS SECTION



OPTION #2-THREE PLY BUR WITH GRANULE CAP SHEET		
Description:	***Budget:***	***Estimated Service Life:***
Install a mechanically attached layer of polyisocyanurate insulation, followed by perlite cover board. Install a three-ply Built-Up Roof (BUR) membrane and associated flashings and 24 gauge precoated galvanized steel flashings. Include replacement of existing skylights with new double-glazed acrylic skylights.	$1,377,000.00 106,668 SF ($12.90/SF)	20-25 years
Advantages:	***Disadvantages:***	
1. Multi-ply system creates redundancy in membrane, increasing puncture and impact resistance. 2. Tough, durable and resilient membrane capable of withstanding maintenance and traffic. 3. Granule surfacing provides protective surface and allows easy inspection and repair compared to gravel surfaced or ballasted roofs. 4. Easily receives restorative coatings, for future service life extension. 5. Hot asphalt applied system offers time proven performance	1. Asphalt fumes during construction may be disagreeable to building occupants. 2. Multi-ply installation is more labor intensive compared to single ply systems. 3. Increased safety risk during construction as asphalt temperatures are above 400°F. 4. Accumulated organic debris on membrane can degrade surfacing.	

ROOF SYSTEM DIAGRAM



Replacement Recommendation

Based on the project requirements and design criteria, PRC recommends implementing a replacement project based on Design Option #1. This type of system meets the majority of the criteria and will provide a roof system that is durable and easy to maintain. If funding is available, we recommend replacing the roof during the 2014 summer construction season. If the project must be delayed due to budget constraints, it should be expected that some level of interior leakage will continue until replacement is accomplished. There is also increased risk that leakage will increase as membrane splitting continues.

The estimated construction cost for roof replacement, based on recommendations made within this report, is **$1,190,000.00.**

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NVLAP LAB CODE 200872-0

Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Professional Roof Consultants
Project: OLCC Milport

JSE Project: 02058
Analysis Date: 03/06/2014
Report Date: 03/06/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
Roof, Area A AB-1401975	LAYER 1	Silver paint	paint filler		**None Detected**
	LAYER 2	Black fibrous tar	asphaltic sand	18% Fibrous Glass	**None Detected**
	LAYER 3	Black fibrous tar/white rocks	asphaltic rock particles	0.5% Fibrous Glass 1% Cellulose 12% Synthetic	**None Detected**
	LAYER 4	Black fibrous tar	asphaltic sand	15% Fibrous Glass	**None Detected**
Subsamples ashed for quality assurance.					
Roof A-additional layers AB-1402051	LAYER 1	Black tar	asphaltic	3% Mineral Wool	**None Detected**
	LAYER 2	Black fibrous tar	asphaltic sand	22% Fibrous Glass 0.5% Cellulose	**None Detected**
	LAYER 3	Tan compressed wood fibers	wood binders	90% Cellulose	**None Detected**
	LAYER 4	Black thin asphaltic paper	asphaltic paper	85% Cellulose	**None Detected**
Subsamples ashed for quality assurance.					

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NVLAP LAB CODE 200872-0

Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Professional Roof Consultants
Project: OLCC Milport

JSE Project: 02058
Analysis Date: 03/06/2014
Report Date: 03/06/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)

Analyst: Darlene Conrad

Approved Signatory Date 3/6/2014

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McLoughlin Offices and Warehouse Roof Evaluation

A survey and evaluation of the existing roof & flashing systems covering the Oregon Liquor Control Commission's McLoughlin Offices and Warehouse located In Milwaukie, Oregon

Presented to:

March 18, 2014

Project # R3059.01

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1. INTRODUCTION

In accordance with our proposal, dated December 10, 2013, Professional Roof Consultants, Inc. (PRC) conducted a roof evaluation of the existing roof systems in place on the Oregon Liquor Control Commission (OLCC) Offices and Warehouse, located at 9079 SE McLoughlin Boulevard, in Milwaukie, Oregon. PRC conducted the evaluation from February 24–28, 2014. The purpose of the roof evaluation was to determine the construction of the existing roof systems, assess the condition of the various components in the roof system, provide recommendations for remedial activity, if required, and provide budget projections associated with our recommendations. OLCC staff provided historical information, leak history, and roof access. The observations and recommendations within this report are the opinion of Professional Roof Consultants, Inc. based on our experience and the conditions observed during our site visit.

TASKS PERFORMED

This report serves several purposes and a number of tasks were performed in order to accomplish our objectives, including the following:

1. A tour of the roof areas, to document roof system components and related flashings.
2. A tour of the interior of the building for a review of the structure and interior leak locations.
3. Interviews with OLCC maintenance personnel and administrative staff regarding leak history and historical performance of existing roof systems.
4. Review of available documentation including architectural drawings, roof replacement and repair records, and previous reports as they pertain to the roof systems in place at the facility.
5. Analyze all data and information retrieved from field investigations and determine appropriate scopes for future action regarding repair and/or replacement.
6. Establish and analyze design criteria pertinent to the roof areas covering the building.
7. Determine feasible roof system designs and membrane options.
8. Review current costs and assemble budgetary cost estimates for design options.
9. Writing and assembly of this report.

REPORT FORMAT

The information contained in this report is divided into three sections:

1. Introduction

This section, which describes the project, the report outline, tasks and procedures associated with accumulation of pertinent information, identification of reference standards, and outlines the goals and objectives of the evaluation.

2. Existing Conditions, Photo Documentation, and Roof Evaluation Forms

This section includes a summary of system assemblies and existing conditions documented as part of this evaluation, along with photo documentation of various roof areas and representative conditions. The Roof Evaluation forms identify existing systems and conditions observed during the survey.

3. Conclusions and Recommendations

Summary of conditions observed, with conclusions drawn from our evaluation, along with recommendations for corrective action including both near term repairs and replacements. This section also includes Design criteria and system options for replacement, and with budgetary cost information.

REFERENCES

Reference material used for research and ascertaining design criteria for this investigation includes:

- National Roofing Contractors Association; The NRCA Roofing Manual – Membrane Roof Systems; 2011 Edition.
- 2010 Oregon Structural Specialty Code, based on the 2009 edition of the International Building Code, as adopted and amended by the State of Oregon.
- Sheet Metal and Air Conditioning Contractors National Association (SMACNA); Architectural Sheet Metal Manual - Sixth Edition.

ROOF AREA DESIGNATIONS

For reporting purposes, the McLoughlin facility has been considered one building with eighteen separate roof areas. These areas have subsequently been labeled as Roof Area A-R. An identifiable roof area is one that has characteristics, such as slope, material, construction type, etc., that differ from other areas on the same building. A Roof Evaluation form was filled out for each of these sections. The forms identify specific information with regard to construction and conditions observed during the evaluation. Roof evaluation forms are provided in section two of the report.

All roof areas at this facility are serviced by single ply roof systems. In general terms there are three types of roof systems installed at this facility; Mechanically Fastened EPDM single ply, Fully-Adhered EPDM single ply, and Ballasted EPDM single ply.

CONSTRUCTION COST ESTIMATES

Budgetary cost information included within this report is considered preliminary in an effort to establish a realistic budget for the scope of work defined. The cost estimates are based upon a reasonable average of probable costs that have been applied to each location with professional judgment. All projected costs are shown in year 2014 values; any projection of costs beyond 2014 should be escalated by a factor of at least 3.5% per year. Cost estimates include roofing work only and do not include seismic or structural upgrade scopes of work that may need to be added in order to arrive at a total project budget.

2. EXISTING CONDITIONS

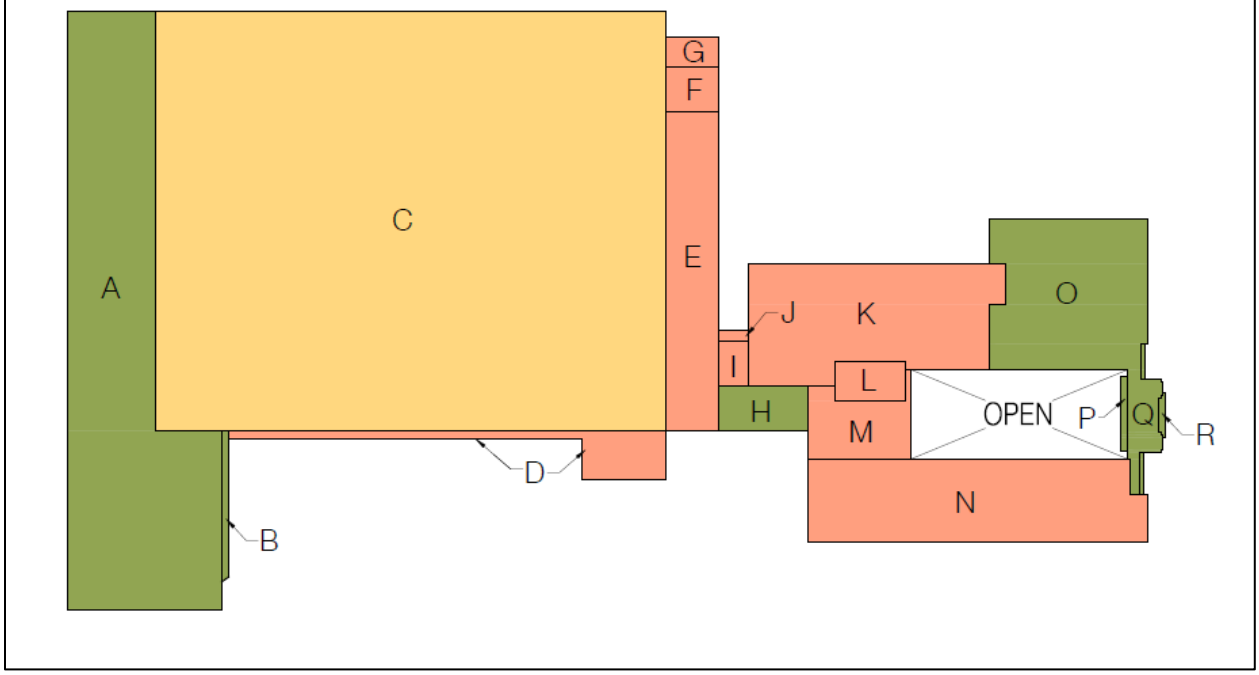
This evaluation was conducted during the week of February 24 -28, 2014. All roof areas were accessed and core samples were taken from each of the roof system type. One core sample was taken on Roof Area O to confirm the construction, additional core samples were not taken from Roof Areas P-R as all of these sections were constructed at the same time. Existing conditions were evaluated and the data was recorded on Roof Evaluation forms. Square footage was obtained from historical drawings.

SUMMARY OF EXISTING ROOF SYSTEMS

There are eighteen (18) individual roof areas on the OLCC McLoughlin facility. Based on information obtained through our core sampling, along with review of historical records and manufacturer markings on the membranes, it appears that there were three distinct roofing projects at this facility. As such, we have grouped these individual roof systems into the following three (3) different categories:

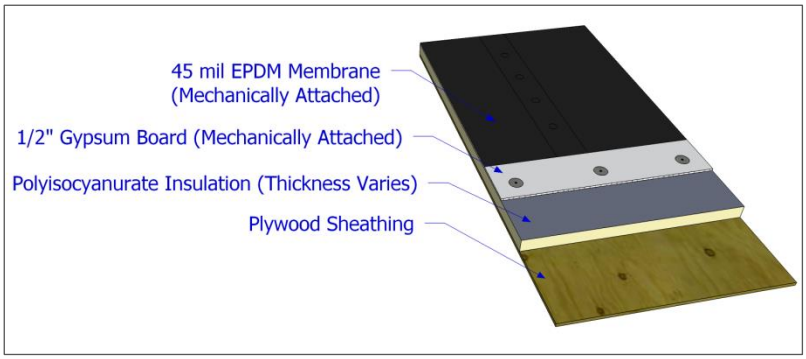
Mechanically Attached EPDM Single Ply	
Fully Adhered EPDM Single Ply	
Ballasted EPDM Single Ply	

ROOF AREA BY SYSTEM TYPE

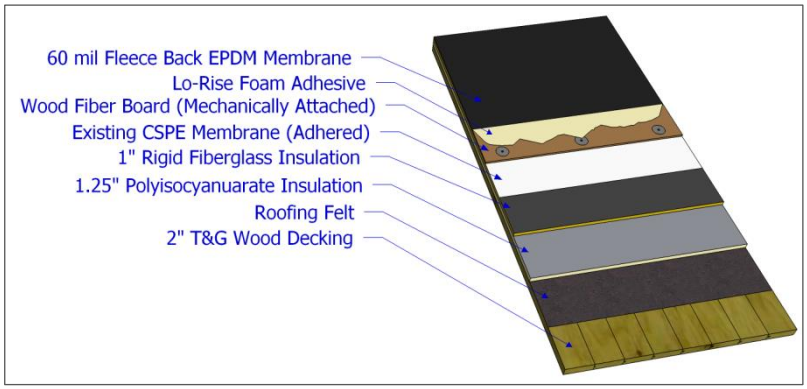


While there are three general categories that have been defined, it is important to note that there are various differences in the systems depending on individual roof area. Subtle differences include roof decks (concrete or wood), number of layers of insulation, and various types of insulation. For simplicity, we have categorized into the three assemblies which are illustrated on the following page.

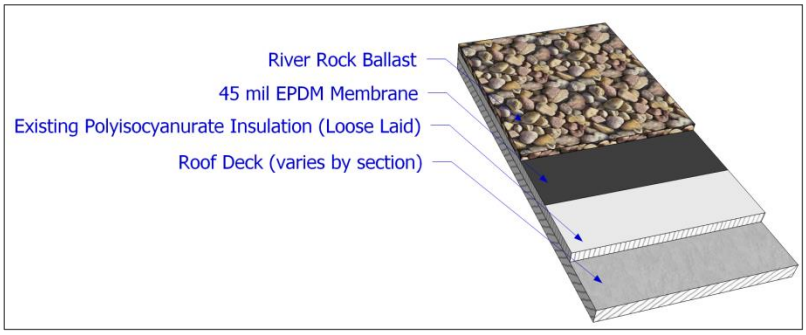
	Mechanically Fastened EPDM
Areas:	A, B, H, O, P, Q, R
S.F.	42,919 square feet
Notes: These mechanically fastened roof systems are now 24 years old. The membrane is providing reasonable service and adhered lap seams are generally watertight. Deficiencies include deteriorated flashings primarily associated with UV deterioration over metal fastener plates. Additional perimeter flashing defects and minor membrane breaches were also observed. Interior leakage is moderate, with most leak locations associated with a specific membrane or flashing defect. Repairs should decrease leakage and extend the life of the roof for a few more years. Replacement has been forecast in 2017.	
Estimated Life:	3-5 years



	Fully Adhered EPDM
Areas:	C
S.F.	94,491 square feet
Notes: This fully adhered roof system is the most recent installation at the facility. It was completed in 1999 and is performing relatively well for its 15 year age. The installed roof system was a recover application over an existing Hypalon roof system. Repairs are recommended in the current year to seal deteriorated penetration flashings and membrane end lap defects. Repairs should allow this roof system to provide additional service. Replacement has been forecast in 2022.	
Estimated Life:	8-10 Years



	Ballasted EPDM
Areas:	D, E, F, G, I, J, K, L, M, N
S.F.	41,805 square feet
Notes: These ballasted EPDM roof systems are now believed to be 29 years old. In 2005, much of the edge flashing was replaced and a new prefabricated metal fascia system was installed. Despite this repair effort, the membrane has continued to shrink (which is a normal part of the aging process for this type of roof system) causing perimeter flashings to disbond from wall substrates. Flashing breaches were observed where flashings were not replaced and various delaminated or deteriorated penetration flashings allow direct water entry. Replacement is forecast in the current year. If funding is not available, emergency repairs could be made to help reduce interior leaks, but they should not be expected to provide long term performance and these roofs will likely continue to experience leakage until replacement is accomplished.	
Estimated Life:	Failing in Areas. Replace in 2014.



The roof systems that are installed on this building cover approximately 179,215 square feet. The Ballasted EPDM roof systems are the oldest at the facility and cover approximately 23% of the total area. The mechanically fastened EPDM roofs were installed in 1990 as part of the office addition in the NW quadrant of the building. These roofs represent 24% of the total roof area. Although not specifically documented as part of that project, we believe the 1977 warehouse was also reroofed very close to that time. The roof system construction is similar and date stamps on the membrane indicate the same timeframe. The remaining 53% of the roof inventory is serviced by the fully adhered EPDM roof system on the original 1954 warehouse. This project was completed in the fall of 1999.

The types of roof systems that have been installed at this facility typically provide between a 20 – 25 year design life. Ballasted EPDM roofs are normally at the lower end of this range as stresses induced from membrane shrinkage begin to cause perimeter and penetration flashing failure. The ballasted systems at the McLoughlin facility have surpassed the intended design life and roof leaks have been occurring over the last several years. A flashing replacement effort in 2005 extended their life; however, moderate leakage is expected to continue as flashings continue to decline. There is also risk of membrane seam failure as the glued membrane seams deteriorate and membrane shrinkage increases stress on the seams. Due to the river rock ballasted membrane surface, it is difficult to accurately diagnose and repair membrane breaches that may occur or are already occurring. Some level of interior leakage is expected to continue until replacement occurs.

The mechanically fastened EPDM roofs at the facility are also performing above their intended design life, as these 24 year old roofs have some remaining service life. Leakage has been moderate over the years, although some areas have chronic problems. Our evaluation found several breaches at penetration flashings caused by a deterioration of self-adhering flashing material. Long term heat aging, caused by increased temperatures of the flashing material over metal fastener plates, has allowed the flashing to erode completely through. This erosion provides a direct path for water to infiltrate beneath the flashing membrane, and since these breaches occur over fastener locations, there is a direct path to the interior of the building. Many of these breaches can be directly associated with interior leak locations, including several of the skylights on the 1977 warehouse, HVAC units above the cafeteria, and various mechanical units on the 1990 office addition. We also observed open flashing laps, disbonded patches at perimeter edge metal components, and a few isolated voids in membrane seams. We recommend implementing a repair project in the current year to address these deficiencies. If repairs are executed with proper materials and in compliance with NRCA guidelines, the manufacturer's written instructions, and good roofing practice, we anticipate these roofs will provide acceptable service for an additional 3-5 years. We recommend budgeting for replacement in 2017. PRC is available to assist the OLCC in developing a repair specification suitable for bidding to qualified roofing contractors.

The fully-adhered EPDM roof assembly is the most recent at the facility and is projected to have the greatest remaining service life. This roof system was installed as a recover application over an existing chlorosulfonated polyethylene (CSPE) roof system. A cover board was mechanically fastened over the existing roof assembly and the fleece-backed EPDM membrane was adhered in a continuous application of low rise urethane foam adhesive. This adhered assembly provides a stable roof system with little potential for membrane shrinkage. Observed deficiencies include minor cracking at corner patches on curb flashings and some deterioration of the self-adhered flashing tape used to seal the end laps of the EPDM membrane. Repairs are recommended in the current year to repair these deficiencies and restore the waterproof integrity of this roof system.

Our core sampling and subsequent laboratory testing of the underlying CSPE membrane confirmed the presence of asbestos containing materials (ACM) in the paper backing on the membrane. Due to the presence of two roof systems, when replacement becomes necessary, removal of both roof systems will be required and proper removal and disposal protocols must be followed regarding the ACM.

Roof evaluation forms have been included on the following pages. These forms contain existing conditions data recorded during this survey.

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** A

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 45 °F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/25/2014

GENERAL:

Area: 29,350 s.f.

Roof Deck: Plywood Sheathing
1/2" Plywood Sheathing

Bldg Height: Three story

Structure: Concrete tilt-up wall panels supporting open web trusses.

Function: Warehouse

Const. Date: 1977

Last Roofed: 1990

Cost: Cost Unknown

Internal Access: ◉ Y ○ N

Parapet Walls? ◉ Y ○ N **Height:** 3 1/2" - 28"

MEMBRANE: EPDM (Mech. Attach.)

45 mil reinforced EPDM membrane is mechanically attached at 12" o.c. w/ plates and screws in the lap. Field seams are adhered and sealed with lap sealant.

Surface: N/A

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ◉ Y ○ N

INSULATION: Polyisocyanurate

Fastened: Mech Fastened

Thickness: 2.75"

Vapor Barrier: None

Wet Insulation: ◉ Yes ○ No ○ Unknown ○ N/A

1/2" gypsum board is mechanically fastened over the Polyisocyanurate insulation. Small amounts of wet insulation are expected due to leak history.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ◉ **Y** ○ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☒ Interior ☒ Scupper ☐ None ☐ N/A

Roof slope is structural. The roof is drained by 7 interior roof drains paired with overflow drains. Three 6.5" round scuppers supplement drains. Drain lines are 4" dia. Minor ponding at crickets.

FLASHINGS:

	Material:	Seam Type:
Coping	Painted Galv. Steel	Butt/Back-up Plate
Curb Flashing	Galvanized Steel	Lapped
Counterflashing	Galvanized Steel	Lapped

Coping is attached to top of wall with a concealed clip on the exterior face and with threaded masonry fasteners @24" o.c. on the interior face.

PENETRATIONS:

Abandoned Penetration
Abandoned Curbed Penetration
Curbed Exhaust
Curbed Skylight
Roof Drains/Overflow Drains

NOTES:

This mechanically fastened, EPDM roof system is in repairable condition. The membrane is securely attached and the adhered seams are generally intact. However, isolated voids in "T" lap patches are allowing water entry. Perimeter flashings are properly terminated with no defects observed. Curbed penetrations, including skylights, were flashed with a pressure sensitive adhesive flashing material. The flashing was not extended over the top of the skylight curbs resulting in some dis-bonded/open top edges. In addition, the flashing material is deteriorating over the metal fastener plates, allowing water entry into the roof system. Repairs are recommended in the current year to restore waterproof integrity. Replacment is anticipated in 3-5 years.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
3-5 Years	3-5 Years	5-7 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission*
Roof Area: B
Building: McLoughlin Warehouse & Offices
Building No.: 01 **Location:** Milwaukie, OR
Weather: Overcast, 45°F
Address: 9079 SE McLoughlin Boulevard Milwaukie, OR
Date: 2/25/2014

GENERAL:

Area: 475 s.f.
Roof Deck: Plywood Sheathing
1/2" Plywood Sheathing
Bldg Height: Single story
Structure: Steel structure supporting plywood sheathing.
Function: Truck dock canopy

Const. Date: 1977
Last Roofed: 1990
Cost:
Cost Unknown

Internal Access: ○ Y ◉ N
Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Mech. Attach.)

45 mil reinforced EPDM membrane is mechanically fastened at 12" o.c. with plates and fasteners in the lap.

Surface: N/A
No. of Roofs: 1
Repairs Found: ◉ Y ○ N
Recent Leaks: ◉ Y ○ N

INSULATION: Gypsum Board

Fastened: Mech Fastened
Thickness: 1/2"
Vapor Barrier: None
Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

Gypsum board is mechanically fastened over one layer of asphalt felt, loose laid on the plywood sheathing.

DRAINAGE:

Slope: 1/4" per foot
Ponding? ○ **Y** ◉ **N**
Roof Drains: ☒ Interior ☒ Scupper ☐ Gutter ☐ D.S.
Overflows: ☒ Interior ☐ Scupper ☒ None ☐ N/A

Roof has structural slope to two cast-iron, interior roof drains. Drain lines are 3" dia.

FLASHINGS:

	Material:	Seam Type:
Coping	Painted Galv. Steel	Lapped
Counterflashing	Galvanized Steel	Lapped

Coping is secured to a raised nailer at the perimeter edge. Counterflashing is surface mounted to adjacent concrete wall with masonry anchors.

PENETRATIONS:

Roof Drains

NOTES:

This mechanically fastened, reinforced EPDM roof system is providing functional service. The membrane and flashings are properly terminated. No significant defects requiring repair were observed.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
5-7 Years	5-7 Years	8-10 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** C

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 41°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/27/2014

GENERAL:

Area: 94,491 s.f.

Roof Deck: Wood Decking
2" T&G wood plank

Bldg Height: Two story

Structure: Concrete structure, Glu-lam beams and solid timber purlins.

Function: Warehouse

Const. Date: 1954

Last Roofed: 1998

Cost: Cost Unknown

Internal Access: ◉ Y ○ N

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Adhered)

60 mil fleece-backed EPDM membrane adhered to wood fiber coverboard in urethane foam adhesive.

Surface: None

No. of Roofs: 2

Repairs Found: ◉ Y ○ N **Recent Leaks:** ○ Y ◉ N

INSULATION: Polyisocyanurate

Fastened: Mech Fastened

Thickness: 1/2"

Vapor Barrier: 2-Ply BUR

Wet Insulation: ◉ Yes ○ No ○ Unknown ○ N/A

Wood fiber coverboard was installed over existing roof system consisting of an adhered single ply membrane over 1" rigid fiberglass and 1.25" foil faced polyiso insulation over an asphalt vapor barrier.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ Y ◉ N

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☒ Interior ☐ Scupper ☐ None ☐ N/A

Roof slope is structural. The roof is drained by interior roof drains paired with overflow drains. Drains are mfg. by Josam with 4" dia. lines. RAC insert drains were installed in select locations.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Curb Flashing	Precoated Galv. Steel	Lapped
Counterflashing	Precoated Galv. Steel	Lapped

Edge metal is a 2-piece, prefabricated system manufactured by Carlisle. The precoated galvanized steel fascia cover is attached to the aluminum anchor bar which is mechanically attached to the structure.

PENETRATIONS:

Curbed Exhaust
Curbed HVAC Unit
Curbed Skylight
Roof Drains
Pipes (plumbing vent stacks)

NOTES:

This fully-adhered EPDM roof system is providing acceptable service. The membrane has good adhesion to the substrate and the perimeter flashings are securely attached and terminated. The coverboard was wet at our core sample location, though no obvious source of water entry was observed. Isolated tears/splits are observed at curb penetrations and there is some deterioration noted in the self-adhering flashing used to strip in end laps of the field membrane. Repairs are recommended to correct these deficiencies in the roof system. With repairs completed, annual preventive maintenance and regular inspection should allow this roof to remain in service for 8-10 years.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
8-10 Years	8-10 Years	15+ Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** D

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 41°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/27/2014

GENERAL:

Area: 3,164 s.f.

Roof Deck: Wood Decking
2" T&G wood plank

Bldg Height: One story

Structure: Wood framed structure w/ brick veneer, Wood columns supporting glu-lam

Function: Truck dock canopy/garage

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: (•) Y ( ) N

Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced 45 mil EPDM membrane is loose laid over insulation and held in place with river rock ballast. Field seams are adhered and sealed with lap sealant.

Surface: None

No. of Roofs: 3

Repairs Found: (•) Y ( ) N **Recent Leaks:** (•) Y ( ) N

INSULATION: Polyisocyanurate

Polyisocyanurate insulation is loose laid over existing BUR roof assembly.

Fastened: Loose Laid

Thickness: 3.25"

Vapor Barrier: None

Wet Insulation: ( ) Yes ( ) No (•) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ( ) Y (•) N

Roof Drains: [X] Interior [ ] Scupper [ ] Gutter [ ] D.S.

Overflows: [X] Interior [ ] Scupper [ ] None [ ] N/A

Roof slope is structural. The roof is drained by interior roof drains. Primary roof drain is mfg. by Josam with 4" dia. line.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Fiberglass reinf. nylon	Butt/Back-up Plate

The perimeter edge flashing is a flexible nylon ballast retainer attached at the perimeter edge.

PENETRATIONS:

Pipe Supports (Screen Wall)
Roof Drains
Pipes (plumbing vent stacks)

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled open perimeter edge flashings. Base flashings are poorly detailed with voids noted at the top edge. Field wrapped pipe flashings are brittle and cracked due to long term UV exposure. The adjacent concrete wall has poorly sealed through-wall penetrations and vertical sealant joints are deteriorated. Organic growth is heavy on the ballasted surface preventing thorough examination of the field membrane. Small drains on canopy area are restricted by debris. Membrane shrinkage has pulled the flashing away from the structure, exposing the roof to water entry.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission*
Roof Area: E
Building: McLoughlin Warehouse & Offices
Building No.: 01 **Location:** Milwaukie, OR
Weather: Overcast, 41°F
Address: 9079 SE McLoughlin Boulevard Milwaukie, OR
Date: 2/27/2014

GENERAL:

Area: 7,974 s.f.
Roof Deck: Wood Decking
2" T&G wood plank
Bldg Height: One story
Structure: Concrete walls, Wood columns supporting glu-lam beams.
Function: Maint. shop/Repack/Offices

Const. Date: 1954
Last Roofed: 1985
Cost: Cost Unknown

Internal Access: (•) Y ( ) N
Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast. Field seams are adhered and sealed with lap sealant.

Surface: None
No. of Roofs: 1
Repairs Found: (•) Y ( ) N **Recent Leaks:** (•) Y ( ) N

INSULATION: Polyisocyanurate

Polyisocyanurate insulation is a single 3" layer, loose laid over one ply of asphalt roofing felt on the wood deck.

Fastened: Loose Laid
Thickness: 3"
Vapor Barrier: None
Wet Insulation: ( ) Yes ( ) No (•) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** (•) **Y** ( ) **N**

Roof Drains: [X] Interior [ ] Scupper [ ] Gutter [ ] D.S.
Overflows: [ ] Interior [ ] Scupper [X] None [ ] N/A

Roof slope is structural. The roof is drained by interior roof drains mfg. by Josam. Drain lines are 4" dia

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate

Edge flashing is a two-piece, pre-manufactured fascia system manufactued by Carlisle. Surface mounted termination bar secures base flashings.

PENETRATIONS:

Curbed Vent
Roof Drains
Pipes (plumbing vent stacks)
Curbed HVAC Unit
Curbed Access Hatch

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled open perimeter base flashings. Base flashings are poorly detailed with voids noted at the top edge. Penetration flashings are deteriorated and open laps and delaminated flashings allow active water entry. The adjacent concrete wall has poorly sealed through-wall penetrations and vertical sealant joints are deteriorated. Organic growth is prominent on the ballasted surface preventing thorough examination of the field membrane. . Rock ballast and oganic debris restrict drains. Drain line at west perimeter is reportedly plugged. Edge flashing was reportedly installed in 2005 as part of a repair project performed by Gregg Roofing, Inc.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** F

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 41°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/27/2014

GENERAL:

Area: 1,005 s.f.

Roof Deck: Reinforced C.I.P. Concrete

Bldg Height: One story

Structure: Concrete walls and support structure.

Function: Boiler Room

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: ◉ Y ○ N

Parapet Walls? ◉ Y ○ N **Height:** 33"

MEMBRANE: EPDM (Ballasted)

45 mil, unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast. Field seams are adhered.

Surface: None

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ◉ Y ○ N

INSULATION: Wood Fiber

Wood fiber insulation is loose laid over concrete roof deck.

Fastened: Loose Laid

Thickness: 1/2"

Vapor Barrier: None

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ◉ **Y** ○ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by one cast iron interior roof drain mfg. by Josam. Drain line is 3" dia. A 12" W x 5 1/2" H scupper in the NE corner of the roof provides overflow protection.

FLASHINGS:

	Material:	Seam Type:
Coping	Copper	Standing Seam
Wall Panels	Copper	Standing Seam
Counterflashing	Copper	Lapped

Coping is 6" wide with a 6" exterior face and 4" interior face. Wall panels are 22" wide with standing seams.

PENETRATIONS:

Curbed Vent
Roof Drains
Flanged Hot Exhaust

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled open perimeter base flashings. Base flashings are poorly detailed with voids noted at the top edge. Penetration flashings are deteriorated and open laps and delaminated flashings allow active water entry. Organic growth is prominent on the ballasted surface preventing thorough examination of the field membrane. Copper sheet metal flashings are marginally attached with loose wall panels and displaced coping sections observed.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** G

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 41°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/27/2014

GENERAL:

Area: 670 s.f.

Roof Deck: Wood Decking
2" T&G wood plank

Bldg Height: One story

Structure: Concrete walls. Glulam beams supporting wood plank deck

Function: Records storage

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: (•) Y ( ) N

Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast. Field seams are adhered.

Surface: None

No. of Roofs: 1

Repairs Found: (•) Y ( ) N **Recent Leaks:** ( ) Y (•) N

INSULATION: Polyisocyanurate

Polyisocyanurate insulation is loose laid over wood plank roof deck.

Fastened: Loose Laid

Thickness: 3.25"

Vapor Barrier: None

Wet Insulation: ( ) Yes ( ) No (•) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ( ) **Y** (•) **N**

Roof Drains: [x] Interior [ ] Scupper [ ] Gutter [ ] D.S.

Overflows: [ ] Interior [ ] Scupper [x] None [ ] N/A

Roof slope is structural. The roof is drained by one cast iron interior roof drain mfg. by Josam. Drain line is 3" dia.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Fiberglass composite	Butt/Cover Plate

Perimeter edge flashing is constructed of a flexible fiberglass material. It was installed over the original edge metal which was left in place when this roof was installed.

PENETRATIONS:

Roof Drains

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled open perimeter base flashings. Base flashings are poorly detailed with voids noted at the top edge. EPDM flashings are delaminating at the joints in the perimeter flashing. Organic growth is prominent on the ballasted surface preventing thorough examination of the field membrane. Organic debris restricts drainage.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** H

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 41°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/27/2014

GENERAL:

Area: 1,647 s.f.

Roof Deck: Plywood Sheathing
3/4" Plywood Sheathing

Bldg Height: One story

Structure: Wood stud framed structure w/ 16" TJI's spaced 48" o.c. Brick veneer facade.

Function: Cafeteria

Const. Date: 1977

Last Roofed: 1990

Cost: Cost Unknown

Internal Access: (•) Y ( ) N

Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Mech. Attach.)

45 mil reinforced EPDM membrane is mechanically attached at 12" o.c. w/ plates and screws in the lap. Field seams are adhered and sealed with lap sealant.

Surface: N/A

No. of Roofs: 1

Repairs Found: (•) Y ( ) N **Recent Leaks:** (•) Y ( ) N

INSULATION: Polyisocyanurate

1/2" gypsum board is mechanically fastened over two layers of 1.5" polyisocyanurate insulation.

Fastened: Loose Laid

Thickness: 3"

Vapor Barrier: None

Wet Insulation: ( ) Yes ( ) No (•) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ( ) Y (•) N

Roof Drains: [X] Interior [ ] Scupper [ ] Gutter [ ] D.S.

Overflows: [X] Interior [ ] Scupper [ ] None [ ] N/A

Roof slope is structural. The roof is drained by one 12" cast iron drain, manufactured by JR Smith. Drain line is 3" diameter.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Curb Flashing	Galvanized Steel	Lapped

The precoated galvanized steel edge metal has been constructed with a gravel stop edge profile. It is secured to the building with a concealed clip on the exterior face and fastened through the horizontal face with roofing nails.

PENETRATIONS:

Conduit
Curbed Mechanical Vent
Curbed HVAC Unit
Roof Drains/Overflow Drains

NOTES:

This mechanically fastened, EPDM roof system is in repairable condition. The membrane is securely attached and the adhered seams are generally intact. Perimeter flashings are properly terminated with no defects observed. Curbed penetrations were flashed with a self adhering flashing material. The flashing material is deteriorating over the metal fastener plates, allowing water entry into the roof system. Self-adhered patches used to seal the joints in the edge metal are delaminating and allowing water entry. Repairs are recommended in the current year to restore waterproof integrity. Replacement is anticipated in 3-5 years.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
3-5 Years	3-5 Years	10+ Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** I

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 45°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/25/2014

GENERAL:

Area: 608 s.f.

Roof Deck: Reinforced C.I.P. Concrete

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Bldg Height: One story

Structure: Concrete walls supporting concrete deck.

Internal Access: ◉ Y ○ N

Function: Hallway/bathrooms

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast.

Surface: None

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ◉ Y ○ N

INSULATION: Polyisocyanurate

The single layer of polyisocyanurate insulation is loose laid over concrete roof deck.

Fastened: Loose Laid

Thickness: 3.25"

Vapor Barrier: None

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ **Y** ◉ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by one cast iron interior roof drain mfg. by Josam. Drain line is 3" dia.

FLASHINGS:

	Material:	Seam Type:
Expansion Joint	Precoated Galv. Steel	Standing Seam
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate

Perimeter edge flashing is a pre-manufactured metal fascia made by Carlisle. Expansion joint cover is installed in 10' lengths and secured with EPDM washered fasteners at 12" o.c.

PENETRATIONS:

Roof Drains

NOTES:

This ballasted EPDM roof system is at the end of serviceable life. Membrane shrinkage has pulled perimeter base flashings from the wall substrate. Base flashings have lost attachment at random areas along the top edge due to this bridging. Penetration flashings are deteriorating due to long term UV exposure, allowing active water entry. Base flashings are poorly detailed with voids noted at the top edge. Organic growth is prominent on the ballasted surface preventing thorough examination of the field membrane. Oranic debris and ballast restrict drainage.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** J

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Overcast, 45°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/25/2014

GENERAL:

Area: 114 s.f.

Roof Deck: Reinforced C.I.P. Concrete

Bldg Height: One story

Structure: Concrete structure and roof deck.

Function: Entrance canopy

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: ○ Y ◉ N

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Ballasted)

45 mil, unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast.

Surface: None

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ○ Y ◉ N

INSULATION: Polyisocyanurate

Fastened: Loose Laid

Thickness: 3.25"

Vapor Barrier: None

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

The single layer of polyisocyanurate insulation is loose laid over concrete roof deck.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ **Y** ◉ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by one cast iron interior roof drain located in the SE corner.

FLASHINGS:

	Material:	Seam Type:
Counterflashing	Painted Galv. Steel	Lapped
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate

Perimeter edge flashing is a pre-manufactured metal fascia made by Carlisle. Counter flashing is surface mounted and attached with masonry anchors.

PENETRATIONS:

Roof Drains

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled perimeter flashings loose, allowing water entry. Organic growth is prominent on the ballasted surface preventing thorough examination of the field membrane. Roof drain was completely obscured by debris.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** K

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/28/2014

GENERAL:

Area: 12,883 s.f.

Roof Deck: Reinforced C.I.P. Concrete

Bldg Height: One story

Structure: Concrete structure and roof deck.

Function: Offices

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: ◉ Y ○ N

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast. Perimeter edge flashings were replaced in 2005

Surface: None

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ○ Y ◉ N

INSULATION: Polyisocyanurate

Fastened: Loose Laid

Thickness: 3.25"

Vapor Barrier: None

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

The single layer of polyisocyanurate insulation is loose laid over concrete roof deck.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ **Y** ◉ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by cast iron drains with 3" drain lines. Manufacturer of drains is Josam. Drains are restricted by organic debris.

FLASHINGS:

	Material:	Seam Type:
Counterflashing	Painted Galv. Steel	Lapped
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate

Perimeter edge flashing is a pre-manufactured metal fascia made by Carlisle; installed as part of a repair project in 2005 by Gregg Rfg.

PENETRATIONS:

Roof Drains
Curbed HVAC Unit
Curbed Fan Unit
Conduit
HVAC Piping
Curbed Access Hatch

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled perimeter flashings loose, allowing water entry. HVAC penetrations have sealant dependant flashings and are poorly detailed, allowing previous water entry. Areas of insulation underneath walkpads have been crushed resulting in low areas on the roof where drainage is ineffective.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	10-15 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** L

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/28/2014

GENERAL:

Area: 760 s.f.

Roof Deck: Reinforced C.I.P. Concrete

Bldg Height: Two story

Structure: Concrete structure and roof deck.

Function: HVAC Penthouse

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: ○ Y ◉ N

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast.

Surface: None

No. of Roofs: 2

Repairs Found: ◉ Y ○ N **Recent Leaks:** ○ Y ◉ N

INSULATION: Polyisocyanurate

Fastened: Loose Laid

Thickness: 3.25"

Vapor Barrier: None

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

The single layer of polyisocyanurate insulation is loose laid over the original BUR membrane installed over the concrete roof deck.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ **Y** ◉ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by one cast iron drain with 4" drain line. Manufacturer of drain is Josam.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate

Perimeter edge flashing is a pre-manufactured metal fascia made by Carlisle.

PENETRATIONS:

Roof Drains
Pipe Supports (Mechanical Equip.)
HVAC Piping

NOTES:

This ballasted EPDM roof system is providing functional service at this time. The flashing replacement in 2005 corrected much of the deterioration on this roof area and the few penetration flashings are performing as intended. Replacement is recommended however, as this roof is a relatively small area and it is surrounded on all sides by roof areas that require replacement. Delaying this project would cause costs to rise significantly (if undetaken as a separate project) and would necessitate construction traffic over the newly completed roofs surrounding this area.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	10+ Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** M

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/28/2014

GENERAL:

Area: 3,023 s.f.

Roof Deck: Reinforced C.I.P. Concrete

Bldg Height: One story

Structure: Concrete structure and roof deck.

Function: Offices

Const. Date: 1954

Last Roofed: 1985

Cost: Cost Unknown

Internal Access: ○ Y ◉ N

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Ballasted)

Unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast.

Surface: None

No. of Roofs: 1

Repairs Found: ◉ Y ○ N **Recent Leaks:** ◉ Y ○ N

INSULATION: Polyisocyanurate

Fastened: Loose Laid

Thickness: 2.5"

Vapor Barrier: 1-Ply BUR

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

The single layer of polyisocyanurate insulation is loose laid over 1 ply BUR vapor barrier installed on the concrete roof deck.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ **Y** ◉ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by cast iron roof drains with 4" dia. piping. Drain manufacturer is Josam.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Expansion Joint	Copper	Standing Seam
Counterflashing	Precoated Galv. Steel	Lapped

Perimeter edge flashing is a pre-manufactured metal fascia made by Carlisle. Copper expansion joint cover appears original to building construction. It is secured in 10' lengths with exposed fasteners at 24"-30" o.c.

PENETRATIONS:

Roof Drains
Pipes (plumbing vent stacks)
Curbed Fan Unit

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage is pulling perimeter base flashings loose from the expansion joint curbs. A recently added curb penetration lacks proper flashing height and termination. Drainage is impeded by debris accumulated at the drains.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission*
Roof Area: N
Building: McLoughlin Warehouse & Offices
Building No.: 01 **Location:** Milwaukie, OR
Weather: Scattered Clouds, 49°F
Address: 9079 SE McLoughlin Boulevard Milwaukie, OR
Date: 2/28/2014

GENERAL:

Area: 11,604 s.f.
Roof Deck: Reinforced C.I.P. Concrete
Bldg Height: One story
Structure: Concrete structure and roof deck.
Function: Offices

Const. Date: 1954
Last Roofed: 1985
Cost: Cost Unknown

Internal Access: ○ Y ◉ N
Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Ballasted)

45 mil, unreinforced EPDM membrane is loose laid over insulation and held in place with river rock ballast.

Surface: None
No. of Roofs: 1
Repairs Found: ◉ Y ○ N
Recent Leaks: ◉ Y ○ N

INSULATION: Polyisocyanurate

Fastened: Loose Laid
Thickness: 2.25"
Vapor Barrier: 1-Ply BUR
Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

The single layer of polyisocyanurate insulation is loose laid over 1 ply BUR vapor barrier on the concrete roof deck.

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ○ **Y** ◉ **N**

Roof Drains: ☒ Interior ☐ Scupper ☐ Gutter ☐ D.S.
Overflows: ☐ Interior ☐ Scupper ☒ None ☐ N/A

Roof slope is structural. The roof is drained by cast iron roof drains with 4" dia. piping. Drain manufacturer is Josam.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Expansion Joint	Copper	Standing Seam
Counterflashing	Precoated Galv. Steel	Lapped

Perimeter edge flashing is a pre-manufactured metal fascia made by Carlisle. 14" wide copper expansion joint cover is secured in 10' lengths with exposed fasteners at 24"-30" o.c.

PENETRATIONS:

Roof Drains
Pipes (plumbing vent stacks)
Curbed Fan Unit

NOTES:

This ballasted EPDM roof system is at the end of its useful service life. Membrane shrinkage has pulled perimeter flashings loose, allowing water entry. Base flashings at expansion joint are disbonded from substrate due to membrane shrinkage. Drains are restricted by debris and ballast.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
1-2 Years	1-2 Years	1-2 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** O

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/28/2014

GENERAL:

Area: 9,740 s.f.

Roof Deck: Plywood Sheathing
3/4" Plywood Sheathing

Bldg Height: One story

Structure: Stud framed walls supporting 16" TJI's.
Brick veneer

Function: Front offices

Const. Date: 1977

Last Roofed: 1990

Cost: Cost Unknown

Internal Access: (•) Y ( ) N

Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Mech. Attach.)

45 mil, reinforced EPDM membrane is mechanically attached at 12" o.c. w/ plates and screws in the lap. Field seams are adhered and sealed with lap sealant.

Surface: N/A

No. of Roofs: 1

Repairs Found: (•) Y ( ) N **Recent Leaks:** (•) Y ( ) N

INSULATION: Polyisocyanurate

1/2" gypsum board is mechanically fastened over two layers of 1.5" polyisocyanurate insulation.

Fastened: Loose Laid

Thickness: 3"

Vapor Barrier: None

Wet Insulation: ( ) Yes ( ) No (•) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** (•) **Y** ( ) **N**

Roof Drains: [X] Interior [ ] Scupper [ ] Gutter [ ] D.S.

Overflows: [X] Interior [ ] Scupper [ ] None [ ] N/A

Roof slope is structural. The roof is drained by 4- 12" interior roof drains. Two- 12" roof drains are installed as overflow drains. Primary drains are 3" lines; overflows are 4" lines.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Curb Flashing	Galvanized Steel	Lapped
Counterflashing	Galvanized Steel	Lapped

Edge metal was fabricated with a gravel stop edge. The 7" ext. face is secured with a concealed clip and the horozontal face is nailed.

PENETRATIONS:

Conduit
Pipes (plumbing vent stacks)
Curbed Exhaust
Curbed HVAC Unit
Curbed Skylight
Roof Drains/Overflow Drains

NOTES:

This mechanically fastened, EPDM roof system is in repairable condition. The membrane is securely attached and the adhered seams are generally intact. The field sheets were installed from west to east resulting in several back water laps. These laps should be monitored for deterioration; though none were found to be open. The pressure sensitive adhesive flashing material used to flash penetrations is deteriorating over the metal fastener plates, allowing water entry into the roof system. Self adhering cover strips at the joints of the edge metal are splitting. Repairs are recommended in the current year to restore waterproof integrity. Replacment is anticipated in 3-5 years.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
3-5 Years	3-5 Years	5-7 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** P

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/28/2014

GENERAL:

Area: 192 s.f.

Roof Deck: Plywood Sheathing
1/2" Plywood Sheathing

Bldg Height: One story

Structure: wood framed structure supporting 2x8 joists.

Function: Front hall window canopy

Const. Date: 1977

Last Roofed: 1990

Cost: Cost Unknown

Internal Access: ◉ Y ○ N

Parapet Walls? ○ Y ◉ N **Height:**

MEMBRANE: EPDM (Mech. Attach.)

45 mil, reinforced EPDM membrane is mechanically attached with plates and fasteners at 12"o.c. in the lap.

Surface: N/A

No. of Roofs: 1

Repairs Found: ◉ Y ○ N

Recent Leaks: ◉ Y ○ N

INSULATION: Gypsum Board

Insulation information obtained from architectural drawings.

Fastened: Mech Fastened

Thickness: 1/2"

Vapor Barrier: None

Wet Insulation: ○ Yes ○ No ◉ Unknown ○ N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ◉ **Y** ○ **N**

Two scuppers drain the roof through the raised gravel stop edge metal.

Roof Drains: ☒ Interior ☒ Scupper ☐ Gutter ☐ D.S.

Overflows: ☒ Interior ☐ Scupper ☒ None ☐ N/A

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Curb Flashing	Galvanized Steel	Lapped
Counterflashing	Galvanized Steel	Lapped

Edge metal was fabricated with a gravel stop edge. The 7" ext. face is secured with a concealed clip and the horozontal face is nailed.

PENETRATIONS: None

NOTES:

This mechanically fastened, EPDM roof system is in repairable condition. The membrane is securely attached and the adhered seams are generally intact. A RUSS strip secures the membrane at the wall and the edge metal terminates the membrane at the edge. Chronic leaks have been experienced at the SW corner of this small roof. Multiple lap sealant repairs are noted at this location as well as sealant repairs to deteriorated EIFS wall cladding. Repairs are recommended in the current year to restore waterproof integrity. Replacement is anticipated in 3-5 years.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
3-5 Years	3-5 Years	5-7 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** Q

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/28/2014

GENERAL:

Area: 1,435 s.f.

Roof Deck: Plywood Sheathing
3/4" Plywood Sheathing

Bldg Height: One story

Structure: stud framed structure supporting 16" TJI's.

Function: Front Entrance/Reception

Const. Date: 1977

Last Roofed: 1990

Cost: Cost Unknown

Internal Access: (•) Y ( ) N

Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Mech. Attach.)

45 mil reinforced EPDM membrane is mechanically attached at 12" o.c. w/ plates and screws in the lap. Field seams are adhered and sealed with lap sealant.

Surface: N/A

No. of Roofs: 1

Repairs Found: (•) Y ( ) N **Recent Leaks:** (•) Y ( ) N

INSULATION: Polyisocyanurate

1/2" gypsum board is mechanically fastened over two layers of 1.5" polyisocyanurate insulation.

Fastened: Loose Laid

Thickness: 3"

Vapor Barrier: None

Wet Insulation: ( ) Yes ( ) No (•) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** (•) **Y** ( ) **N**

Roof Drains: [X] Interior [ ] Scupper [ ] Gutter [ ] D.S.

Overflows: [X] Interior [ ] Scupper [ ] None [ ] N/A

Roof slope is structural. The roof is drained by 2- 12" interior roof drains. Two- 12" roof drains are installed as overflow drains. Drain lines are 2" dia.

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Curb Flashing	Galvanized Steel	Lapped
Counterflashing	Galvanized Steel	Lapped

Edge metal was fabricated with a gravel stop edge. The 7" ext. face is secured with a concealed clip and the horozontal face is nailed.

PENETRATIONS:

Conduit
Roof Drains/Overflow Drains
Curbed HVAC Unit

NOTES:

This mechanically fastened, EPDM roof system is in repairable condition. The membrane is securely attached and the adhered seams are generally intact. Select areas of the flashing material are deteriorating over the metal fastener plates, allowing water entry into the roof system. Self adhering cover strips at the joints of the edge metal are splitting. Repairs are recommended in the current year to restore waterproof integrity. Replacment is anticipated in 3-5 years.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
3-5 Years	3-5 Years	5-7 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

ROOF EVALUATION

Owner: *Oregon Liquor Control Commission* **Roof Area:** R

Building: McLoughlin Warehouse & Offices

Building No.: 01 **Location:** Milwaukie, OR **Weather:** Scattered Clouds, 49°F

Address: 9079 SE McLoughlin Boulevard Milwaukie, OR **Date:** 2/25/2014

GENERAL:

Area: 80 s.f.

Roof Deck: Plywood Sheathing
1/2" Plywood Sheathing

Bldg Height: One story

Structure: Wood framed canopy structure.

Function: Entrance canopy

Const. Date: 1977

Last Roofed: 1990

Cost: Cost Unknown

Internal Access: (•) Y ( ) N

Parapet Walls? ( ) Y (•) N **Height:**

MEMBRANE: EPDM (Mech. Attach.)

45 mil, reinforced EPDM membrane is mechanically attached at 12" o.c. w/ plates and screws in the lap. Field seams are adhered and sealed with lap sealant.

Surface: N/A

No. of Roofs: 1

Repairs Found: ( ) Y (•) N **Recent Leaks:** ( ) Y (•) N

INSULATION: Gypsum Board

1/2" gypsum board is mechanically fastened to the plywood deck.

Fastened: Mech Fastened

Thickness: 1/2"

Vapor Barrier: None

Wet Insulation: ( ) Yes (•) No ( ) Unknown ( ) N/A

DRAINAGE:

Slope: 1/4" per foot **Ponding?** ( ) Y (•) N

Structural slope is achieved through tapered wood joists.

Roof Drains: ☐ Interior ☐ Scupper ☒ Gutter ☐ D.S.

Overflows: ☐ Interior ☐ Scupper ☐ None ☐ N/A

FLASHINGS:

	Material:	Seam Type:
Edge Flashing	Precoated Galv. Steel	Butt/Back-up Plate
Counterflashing	Precoated Galv. Steel	Lapped

Edge metal is secured with roofing nails through the horizontal face.

PENETRATIONS: None

NOTES:

This mechanically fastened, EPDM roof system is currently providing acceptable service. in repairable condition. The membrane is securely attached and the adhered seams are generally intact. No defects requiring repair were observed. Replacement has been forecast in 3-5 years to coincide with necessary replacements of adjacent roof areas.

ESTIMATED LIFE:

Membrane:	Base Flashing:	Flashings:
3-5 Years	3-5 Years	5-7 Years

Inspected By: Derek Josephson

PROFESSIONAL ROOF CONSULTANTS INC

PHOTO DOCUMENTATION

Photographic Documentation

McLoughlin Offices and Warehouse

1.

Overview of Roof Area A.

2.

Void in membrane patch can allow water entry.

3.

Self-adhering flashings are deteriorating over metal fastener plates; active water entry occurs.

4.

Curb flashing is open at top edge.

5.

Overview of Roof Area B.

6.

Overview of Roof Area H.

7.

Flashing is deteriorated at fasteners plates around HVAC curb (active leak location).

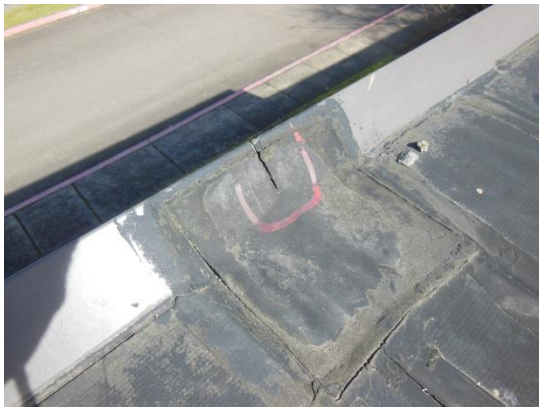
8.

Drains are restricted by organic debris (typical condition).

9.

Overview of Roof Area O.

10.

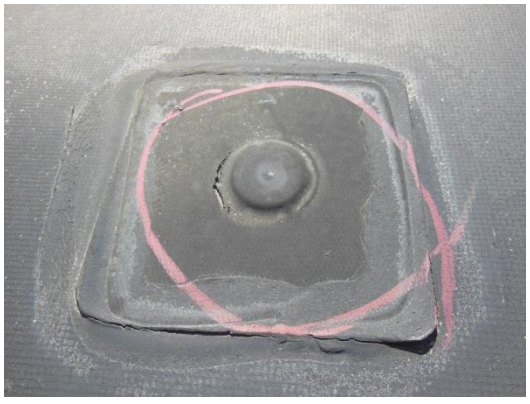


Flashing patches at joints in edge metal are splitting and may allow water entry.

11.

Corner of perimeter flashing has delaminated from edge metal.

12.



Self-adhered flashing material has deteriorated over metal fastener plates.

13.

Overview of Roof Area P.

14.

EIFS wall cladding is cracked in several locations on the interior of the wall.

15.

Flashing material has deteriorated over metal fastener plate at HVAC unit.

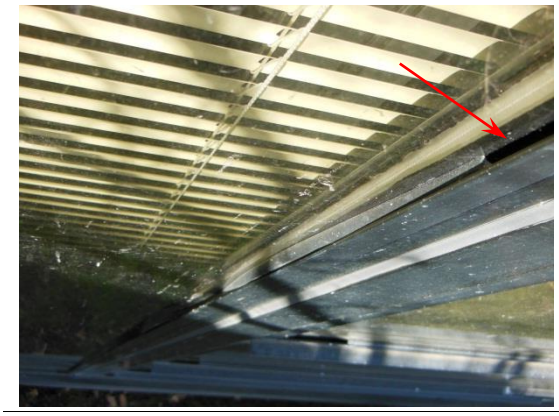
16.

Overview of Roof Area Q. SW corner has been a chronic leak location.

17.

EIFS wall cladding has cracked.

18.



Weather stripping is missing from window frame.

19.

Overview of Roof Area R.

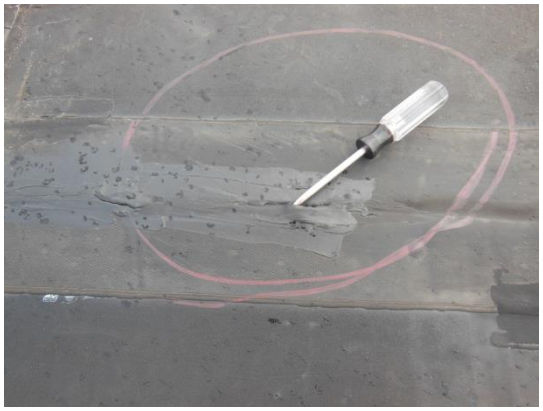
20.

Overview of Roof Area C looking south.

21.

Overview of Roof Area C looking west.

22.



Cover strips at end laps of membrane have small splits developing.

23.

Coverboard at core sample location was wet.

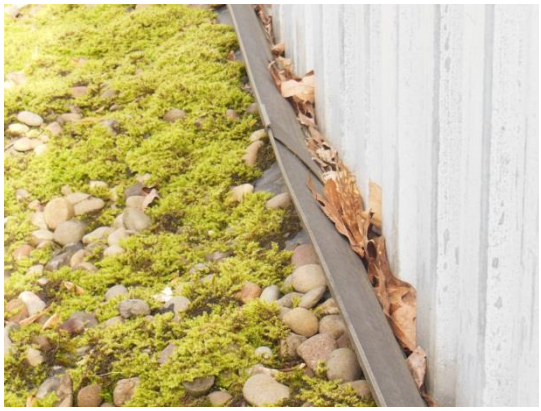
24.

Small splits are observed at random locations in corner patches of skylight curb flashings.

25.

Overview of Roof Area D looking south.

26.



Membrane shrinkage has pulled edge flashings away from structure.

27.

Base flashings are poorly detailed at vertical joints in concrete wall.

28.

Sealant at vertical wall joint has failed.

29.

Field wrapped pipe flashings are deteriorated due to long term UV exposure.

30.

Abandoned through-wall penetrations are poorly sealed.

31.

Overview of Roof Area E looking west.

32.

Base flashing termination is less than optimum and is sealant dependent.

33.

Curb flashing has failed, allowing active leakage at HVAC unit.

34.

Roof drains are restricted by organic debris (typical condition).

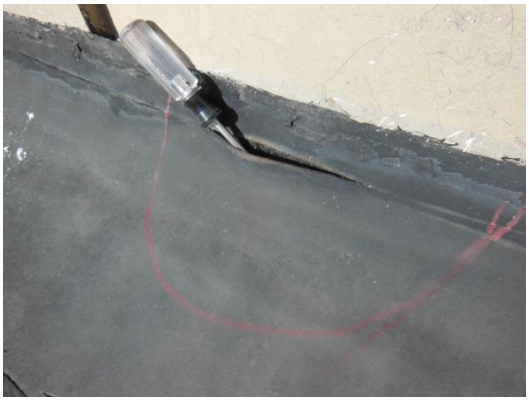
35.

Overview of Roof Area F.

36.

Perimeter flashing is deteriorating.

37.



Membrane shrinkage has pulled base flashing from substrate and top edge is open.

38.

Curb flashing is open.

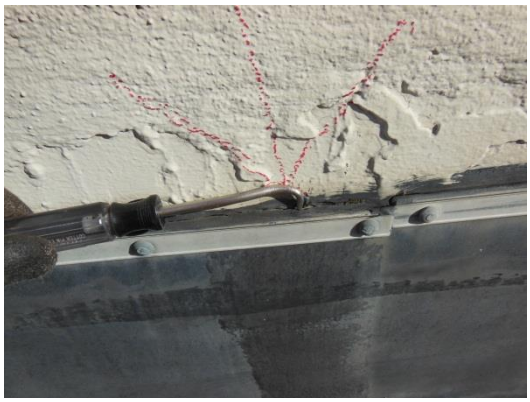
39.

Top edge of storm collar is not watertight.

40.

Overview of Roof Area G.

41.



Termination bar is loose and sealant at top edge of flashing is deteriorated.

42.

Membrane is disbonded from perimeter edge flashing.

43.

Overview of Roof Area I looking west.

44.

Membrane shrinkage has pulled base flashings away from the wall substrate.

45.

Top edge of base flashing is open.

46.

Perimeter flashings are open on Roof Area J.

47.

Overview of Roof Area K looking south.

48.

Conduit penetration lacks a proper flashing.

49.

Utility line penetration is poorly detailed and is sealant dependent.

50.

Roof hatch lacks a vertical flashing and horizontal strip flashing has failed.

51.

Overview of Roof Area L.

52.

Overview of Roof Area M.

53.

Membrane shrinkage is pulling base flashings away from expansion joint curb.

54.

Curbed penetration flashing is not properly terminated.

3. RECOMMENDATIONS

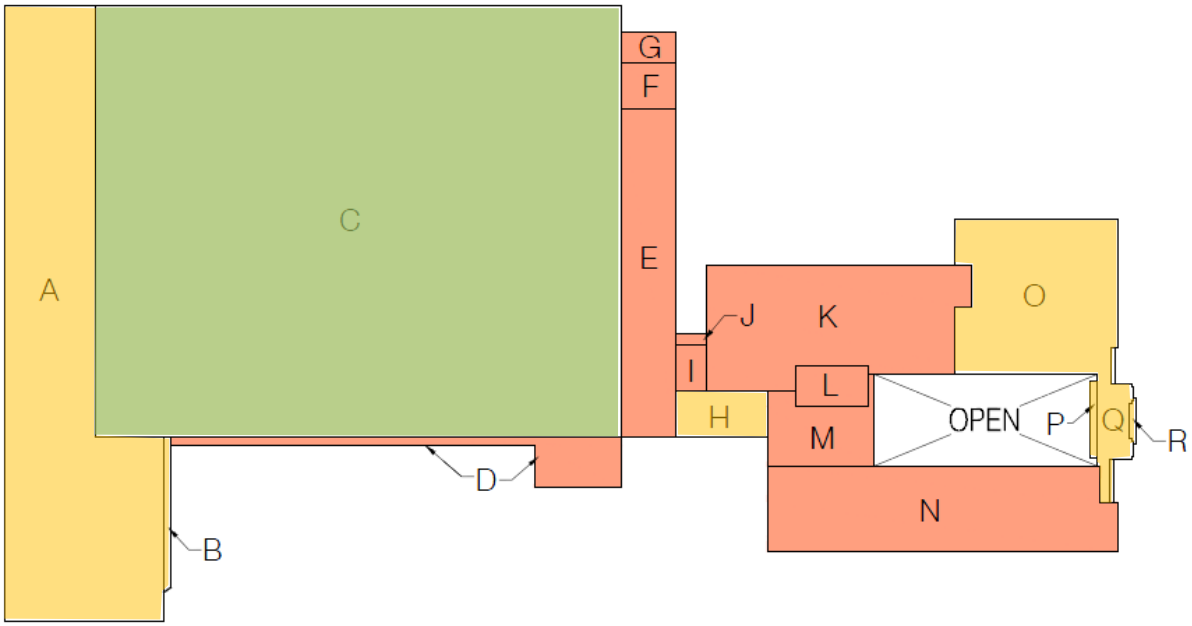
Based on our evaluation of the roofs covering the McLoughlin Offices and Warehouse, we have established a set of priorities for roof replacement. The priorities have been established based on existing membrane condition and past performance without emphasis given to interior occupancy.

The existing Ballasted EPDM roof systems are reaching the end of their useful service life. Membrane shrinkage has pulled perimeter flashings from substrates and penetration flashing deterioration and improper detailing permits water entry. As the roof system continues to age, an increase in flashing failure and seam delamination is likely to occur. Replacement of these roof systems is therefore recommended.

The Mechanically Attached and Fully Adhered EPDM roof systems have remaining service life, and additional service life can be provided by the implementation of repairs. The following replacement priorities have been established:

PRIORITIES

	Priority 1	Roof system is currently failing. Recommend replacement.
	Priority 2	3 – 5 years remaining.
	Priority 3	8 – 10 years remaining.



DESIGN CRITERIA

There are many roof systems that could be considered for this particular project. When deciding which system will work the best for a long period of time, it is important to list what criteria will have a direct impact on the performance and longevity of the system while it is in place. The following design criteria have been identified for the roof areas recommended for replacement at the McLoughlin Offices and Warehouse:

Structure

- ✓ The building structure was constructed of reinforced concrete walls and either cast in place concrete roof decks or T&G wood plank decking. Deck deterioration is not anticipated.

Roof Membrane

- ✓ The existing roof assembly is currently allowing water to infiltrate the building, and some level of wet insulation is likely.
- ✓ One roof system exists. However ballast and membrane removal would be required for an overlay and the insulation currently in place would not provide an acceptable substrate for attachment of additional layers. Full removal is recommended.
- ✓ Wind securement and uplift standards should apply, as a minimum, to Factory Mutual standards for 1-90 acceptance or approval.
- ✓ The roof system must conform to the requirements of the Oregon Structural Specialty Code.
- ✓ A Class A fire rating is recommended.
- ✓ Roof membrane should be capable of withstanding moderate maintenance traffic.

Insulation

- ✓ The interior space below these roof areas is occupied and conditioned space.
- ✓ The roof insulation at roof level is below current code requirements. Additional insulation at roof level should be considered.
- ✓ Existing over deck rigid insulation is damaged from foot traffic and moisture intrusion, and will not provide an acceptable substrate for re-use.

Drainage

- ✓ Roof slope is structural. Ponding water occurs mainly due to restricted drainage devices and compression of insulation.
- ✓ Primary drainage is achieved through interior roof drains. Drainage devices appear adequate for the given roof areas.
- ✓ There are no overflow provisions on these roofs.
- ✓ Tapered insulation can be used to construct crickets and saddles between drains to improve lateral runoff.

Flashings

- ✓ Edge flashing metal is in fair condition and could be reused depending on roof system selection.
- ✓ Flashings at walls are in poor condition and will require replacement.

Penetrations

- ✓ Some details, particularly HVAC unit curbs and exhaust vents, will require removal and re-installation in order to provide appropriate long-term flashing.
- ✓ Some roof penetrations are abandoned, and should be removed when the roof is replaced.

Maintenance

- ✓ The roof areas see moderate service traffic to maintain HVAC units.
- ✓ Adjacent trees and vegetation deposit foliage debris onto the roof surface.
- ✓ The roof system should be capable of withstanding moderate service traffic.
- ✓ There is no fall protection at the exposed perimeter roof edges. The addition of fall protection is recommended.

While this list does not rule out all systems that could be installed, and certainly does not contain all criteria that could be itemized, it does produce a “short list” of suitable roof system assemblies.

The following scope of work is recommended for replacement of these roof areas regardless of the Design Option selected:

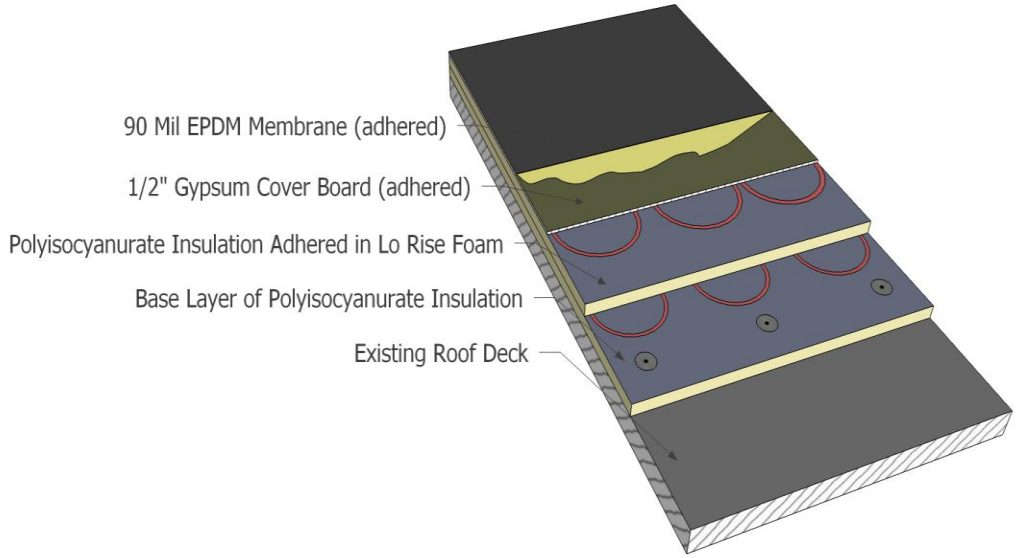
- ✓ Remove existing roof system down to the roof deck (either concrete or T&G wood plank deck).
- ✓ Install a base layer of polyisocyanurate insulation (either adhered or mechanically fastened depending on substrate type).
- ✓ Install a second layer of polyisocyanurate insulation, adhered to the base layer in low-rise foam adhesive.
- ✓ Install ½” thick gypsum cover board, adhered in low-rise foam adhesive.
- ✓ Install the roof membrane in a full application of membrane adhesive.
- ✓ Install perimeter and penetration flashings per the system manufacturer’s recommendations.
- ✓ Install new 24 gauge pre-coated galvanized steel flashings.

The following pages present Design Options with regard to roof system selection. The options are based on criteria and standards developed for these particular roof areas, and are presented with estimated construction cost, estimated life, and a brief comparison of advantages and disadvantages of the particular option.

Roof System Design Options

Option #1 90 mil EPDM Single Ply fully adhered over gypsum coverboard		
Description:	***Budget:***	***Estimated Service Life:***
Remove existing roof system down to the roof deck Install insulation and coverboard as outlined above. Install a fully-adhered, non-reinforced, EPDM membrane and associated flashings.	$499,569.00 41,805 SF ($11.98 / SF)	25-28 years
Advantages:	***Disadvantages:***	
1. Durable and resilient membrane. 2. EPDM is a time tested material with proven performance under various environmental conditions. 3. Gypsum cover board provides a stable and highly resistant substrate for impact and puncture damage. 4. System installation requires no use of asphalt; significantly reducing fumes/odors during construction. 5. Less expensive than PVC option.	1. Adhered membrane seams are dependent on proper field techniques to achieve durable seams. 2. Adhesive applied systems require temperatures above 50° F. 3. Risk of damage due to rooftop traffic (roof/HVAC maintenance). 4. Dark colored membrane is not reflective.	

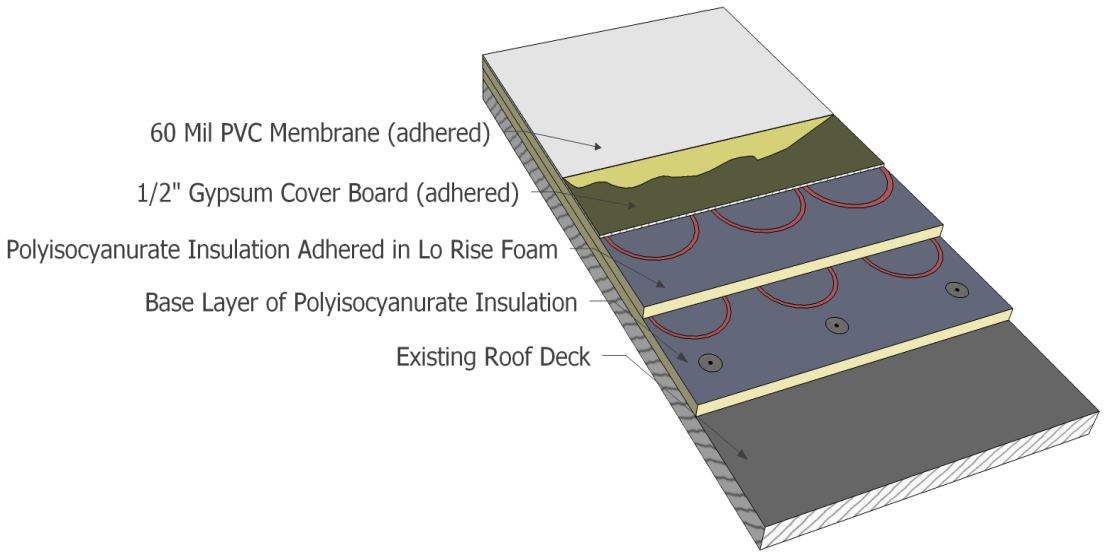
Roof System Diagram



OPTION #2- 60 MIL PVC SINGLE PLY FULLY ADHERED OVER GYPSUM COVERBOARD		
Description:	***Budget:***	***Estimated Service Life:***
Remove existing roof system down to the roof deck Install insulation and coverboard as outlined above. Install a fully-adhered, fiberglass reinforced, PVC membrane and associated flashings.	$528,835.00 41,805 /SF ($ 12.65 / SF)	22-25 years

Advantages:	***Disadvantages:***
1. Hot air welded seams create a monolithic continuous membrane. 2. White reflective surface minimizes solar heat gain. 3. Gypsum cover board provides a stable and highly resistant substrate for impact and puncture damage. 4. System installation requires no use of asphalt; significantly reducing fumes/odors during construction.	1. Single ply membrane lacks redundancy available in other systems. 2. Surface can be slippery when wet or icy; increasing safety risks during rooftop maintenance activities. 3. Adhesive applied systems require temperatures above 50° F. 4. Risk of damage due to rooftop traffic (roof/HVAC maintenance). 5. Requires specialized repair procedures using “non-standard” materials.

ROOF SYSTEM CROSS SECTION



Replacement Recommendation

Based on the project requirements and design criteria, PRC recommends implementing a replacement project based on Design Option #1. This type of system meets the majority of the criteria and will provide a roof system that is durable and easy to maintain. If funding is available, we recommend replacing the roof during the 2014 summer construction season. If the project must be delayed due to budget constraints, it should be expected that some level of interior leakage will continue until replacement is accomplished. There is also increased risk that leakage will increase as membrane shrinkage continues.

The estimated construction cost for roof replacement, based on recommendations made within this report, is **$499,569.00.**

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Ph: 503-659-8338 Fax 503-659-7577
www.jselabs.com

NVLAP LAB CODE 200872-0

Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Professional Roof Consultants
Project: OLCC McLoughlin/ Milwaukie, OR

JSE Project: 02058
Analysis Date: 03/04/2014
Report Date: 03/04/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
Roof Area A	LAYER 1	Black/Brown fibrous sheeting	asphaltic	10% Fibrous Glass	**None Detected**
AB-1401907			binders	50% Cellulose	
Subsamples ashed for quality assurance.					
Roof Area B	LAYER 1	Black tar	asphaltic filler	5% Cellulose	**1 % Chrysotile**
AB-1401908	LAYER 2	Dark brown fibrous sheeting	asphaltic binders	45% Cellulose	**35 % Chrysotile**
Roof Area C Membrane Backer	LAYER 1	Beige flexible sheeting top	rubber		**25 % Chrysotile**
AB-1401909			binders		
	LAYER 2	Beige flexible sheeting middle	binders filler		**40 % Chrysotile**
	LAYER 3	Black tar/ yellow fibers	asphaltic	15% Fibrous Glass	**None Detected**
			binders	15% Cellulose	

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Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Professional Roof Consultants
Project: OLCC McLoughlin/ Milwaukie, OR

JSE Project: 02058
Analysis Date: 03/04/2014
Report Date: 03/04/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
Roof Area C Vapor Barrier AB-1401910	LAYER 1	White powder top tar	asphaltic binders	20% Fibrous Glass 30% Cellulose	**None Detected**
	LAYER 2	Black fibrous tar middle	asphaltic binders	20% Fibrous Glass 30% Cellulose	**None Detected**
	LAYER 3	Black rubbery sheeting	rubber filler	15% Fibrous Glass 5% Cellulose	**None Detected**

Subsamples ashed for quality assurance.

Roof Area D Bur w/ Chopped Glass Emulsion AB-1401911	LAYER 1	Brown/ black fibrous tar	asphaltic binders	25% Cellulose	**None Detected**
	LAYER 2	Black fibrous tar middle	asphaltic binders	35% Cellulose	**None Detected**
	LAYER 3	Brown/ black fibrous tar	asphaltic binders	15% Fibrous Glass	**None Detected**

Subsamples ashed for quality assurance(layer 1 & 2).

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Professional Roof Consultants
Project: OLCC McLoughlin/ Milwaukie, OR

JSE Project: 02058
Analysis Date: 03/04/2014
Report Date: 03/04/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
Roof Area D Smooth Bur w/ Baseshell AB-1401912	LAYER 1	Black fibrous tar top	asphaltic binders		**None Detected**
	LAYER 2	Black fibrous tar middle	asphaltic binders	40% Cellulose	
	LAYER 3	Black fibrous tar bottom	asphaltic binders	20% Fibrous Glass	
Subsamples ashed for quality assurance (layer 1,2, &3).					
Rood Area E Bldg Paper on Wood Deck AB-1401913	LAYER 1	Black fibrous tar sheeting	asphaltic binders	60% Cellulose	**None Detected**
Subsamples ashed for quality assurance.					
Roof Area I 1 ply Ashalt on Concrete Deck AB-1401914	LAYER 1	Black/ brown fibrous tar	asphaltic binders	20% Fibrous Glass	**None Detected**
Subsamples ashed for quality assurance.					

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Professional Roof Consultants
Project: OLCC McLoughlin/ Milwaukie, OR

JSE Project: 02058
Analysis Date: 03/04/2014
Report Date: 03/04/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
Roof Area K 1 ply Asphalt on Concrete Deck AB-1401915	LAYER 1	Black fibrous tar	asphaltic binders	20% Fibrous Glass	**None Detected**
	LAYER 2	Black fibrous tar	asphaltic binders	20% Fibrous Glass	**None Detected**
Subsamples ashed for quality assurance (layer 1 & 2).					
Roof Area M 1 ply Asphalt on Concrete Deck AB-1401916	LAYER 1	Black/ brown fibrous tar	asphaltic binders	20% Fibrous Glass	**None Detected**
Subsamples ashed for quality assurance.					

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Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Professional Roof Consultants
Project: OLCC McLoughlin/ Milwaukie, OR

JSE Project: 02058
Analysis Date: 03/04/2014
Report Date: 03/04/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)
Roof Area L Gravel Bur on Concrete Deck AB-1401917	LAYER 1	Black fibrous tar top	asphaltic binders	10% Fibrous Glass	**None Detected**
	LAYER 2	Black fibrous tar bottom	asphaltic rock particles	10% Fibrous Glass	**None Detected**

Subsamples ashed for quality assurance.

Roof Area N 1 ply Asphalt on Concrete Deck AB-1401918	LAYER 1	Black tar/fibrous	asphaltic	15% Fibrous Glass	**None Detected**
	LAYER 2	Yellow loose fibrous	misc.	99% Fibrous Glass	**None Detected**

Subsamples ashed for quality assurance.

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NVLAP LAB CODE 200872-0

Asbestos Analysis of Bulk Materials by Polarized Light Microscopy

Professional Roof Consultants
Project: OLCC McLoughlin/ Milwaukie, OR

JSE Project: 02058
Analysis Date: 03/04/2014
Report Date: 03/04/2014

Sample	Layer	Description	Binder/Matrix	Other Non-Asbestos	Asbestos (% Type)

Analyst: Thienanh Tran

Approved Signatory Thienanh Date 3/4/2014

JSE is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP) for bulk asbestos analysis by EPA-600/M4-82-020 and EPA/600/R-93/116 methods for polarized light microscopy (PLM).

Analysis results are solely for the sample(s) analyzed. Asbestos content for an inhomogeneous sample is reported by layer when it is possible to subsample the discrete strata for individual analysis. Small diameter fibers may not be detected by this method.

Quantification is performed using visual area estimation unless otherwise stated in the report. Qualitative and quantitative transmission electron microscopy (TEM) analysis may be recommended for difficult samples. Quantitative analysis by PLM point count or TEM is recommended for sample(s) testing at < or = to 10% asbestos.

Asbestos includes the following minerals: chrysotile, amosite, crocidolite, tremolite, actinolite, anthophyllite. "Matrix" is defined as non-asbestos, non-binder fibrous and non-fibrous components. "Binder" is defined as a component added for cohesiveness.Non-asbestos sample constituents may not be definite.

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Business Case, Solution Alternatives, and Selection of Solution Approach
For the Oregon Liquor Control Commission (OLCC)
Provide Online and E-Commerce Licensing ("Project")
August 2014

Introduction

This document outlines the following aspects of the Project:

- Project Background
- Business Case
- Solution Alternatives
- Overall Project Risk and Critical Success Factors
- Conclusion and Solution Approach Selection

Project Background

Project Objective. The Project's objective is to improve customer service, improve information availability and accuracy, and streamline OLCC regulatory business processes by allowing liquor license and service permit applicants to provide application information online and pay electronically via e-commerce. The application and payment information that is collected online will be automatically integrated into OLCC's existing licensing and service permit systems and workflow to facilitate more efficient processing.

Current System. OLCC's current license system is known as the License Master System ("LMS"). The LMS works in conjunction with the "Cashier" system to provide fee collection, application processing and issue of approved license certificates. In addition, OLCC operates distinct License Renewal ("LRS") and a Service Permit / Server Education ("SPSE") Systems that facilitate the renewal of licenses by geographic region as well as the issue of Service Permits to individuals authorized to serve alcoholic beverages in Oregon. The activities of the LMS, LRS, SPSE and Cashier are considered within the scope of the online licensing and service permitting system as the solution will be designed to accept new license, license renewal and service permit applications online, including payment.

Though OLCC's existing systems do not currently capture all available application information as desired, agency management has concluded that the systems can very rapidly be configured to meet any foreseeable change in OLCC's regulatory duties and continue to provide the needed back-office processing capabilities required for the foreseeable future. However, the current systems currently require manual input by OLCC staff and do not provide any online processing or payment capability.

The project will directly address three deficiencies:

1) All application information (i.e. all data attributes) will be captured and available to staff electronically
2) Manual input will be reduced through automation to integrate the online and back-office systems
3) OLCC's customers will also experience increased service quality and convenience while saving time and money by applying and paying online rather than physically at one of OLCC's offices

Decision to Enhance Current System. OLCC management has considered the costs, benefits and risks associated with the alternatives outlined in this document and concluded that:

1) Given an ROI horizon of 5 years related to the development and implementation of the system and;
2) Considering the natural risks to the agency as well as the Project-specific risks during that time and;
3) Assuming OLCC's existing systems can continue to provide back-office processing capability;

It is in the state's best interest to pursue system enhancement to meet the agency's online needs for the short term and revisit back-office processing again after the risk landscape has mitigated.

Project Funding. OLCC expects that the Policy Option Package for Online License Application Processing, which includes $250,000 for the development and implementation of the enhancement, will be approved for the 2015-2017 biennium.

Business Case

Function Deficiencies of Existing Systems. The functional deficiencies of the existing LMS, LRS, SPSE and Cashier systems that necessitate enhancement are as follows:

1) The current systems do not capture all application information electronically
2) The current systems require manual input
3) The current systems do not provide online application processing or payment capability

Anticipated Business Needs. In addition to the functional deficiencies of existing systems as described above, OLCC recognizes that there are also future business drivers that must be considered, at the minimum, from a risk perspective while analyzing the available solution alternatives. Anticipated business needs that OLCC considered critical to the analysis of solution alternatives are:

1) Growth of licensing and service permit processing responsibilities
2) The ability to regulate additional product categories in the future
3) The ability to regulate OLCC's existing product in new ways
4) The need to improve customer convenience and productivity

Business Drivers for System/Process Improvement. The business case for enhancing the existing systems can be summarized by linking the existing systems functional deficiencies to the business drivers for system/process improvement, as shown in Table 1 as well as the anticipated business needs to the business drivers and risks listed in Table 2. The financial benefits associated with remediating the deficiencies described herein cut across OLCC's program and divisions and are too lengthy to detail in this narrative. Suffice to say that OLCC conservatively estimates the financial benefits to be approximately $1.35M over five years, the detail of which is included in the OLCC Online Financial Analysis spreadsheet – Financial Benefit Analysis tab. Likewise, the risks associated with the anticipated needs are detailed later in this document.

Table 1. Existing system deficiencies vs. Business Drivers for System/Process Improvement

Existing System Functional Deficiency	Business Driver for System/Process Improvement
1. The current systems do not capture all application information electronically	*Staff Productivity.* The inability of the current system to capture all license application information requires license staff to physically share and distribute paper files during processing as well as scanning of paper documents to facilitate electronic search and retrieval.
2. The current systems require manual data input	*Staff Productivity.* OLCC staff are required to manually input all required data into OLCC's existing systems by hand, resulting in loss of productivity.
3. The current systems do not provide online application processing or payment capability	*Staff Productivity.* The inability of the current system to accept application information and process payments and refunds electronically requires staff members to manually input application information as well as process and refund license and service permit payments.

Table 2. Anticipated Business Needs for System/Process Improvement

Anticipated Business Needs	Business Drivers & Risks
1. Growth in Licenses and Service Permit Processing Volumes	On average, viewed over the last 10 years, OLCC's License Renewals are growing at approximately 4% year over year, while Service Permits are growing at approximately 5% year over year. This equates to a net increase of nearly 3,000 licenses over the next five years and almost 11,000 service permits during the same time.
2. Ability to regulate additional product categories	OLCC may be required to regulate additional controlled substances in the future, for example Marijuana. This *potential* future requirement introduces risk into systems development because the detail of the laws, rules, policies and procedures that will form the requirements for future regulatory system development are not known. Further, it is possible that changes such as the regulation of Marijuana could call for significant new integration across the Regulatory and Distilled Spirits programs and systems for associating licensees, products, inventories and audits as well as the collection of taxes on production and sales.
3. Ability to regulate existing product in new ways	OLCC may be required to alter the nature of the existing liquor distribution model in Oregon through a concept known as Liquor Distribution "Hybridization", wherein liquor would be sold by the state at retail and wholesale through both agencies and licensees. Much like the regulation of new products, this could call for integration across the Regulatory and Distilled Spirits programs and systems in unforeseen ways and affect requirements for future regulatory system development.
4. Improved customer convenience and productivity	OLCC recognizes the desire of stakeholders to interact with the agency electronically to improve convenience as well as save time and resources by avoiding travel to, and processing time in, an OLCC facility. This is the greatest applicable non-financial benefit to the agency. While it is difficult to quantify the benefit of providing online services, it is plainly understood that the benefits of online processing to the customer are immense. Consider the time savings alone to the Oregon economy: assuming consistent future growth rates, by the time the online system is available, OLCC will process nearly 270 transactions per day that require Oregonians to manually process paper in some fashion for submission to the OLCC, and which often require the applicant to be present in person at an OLCC office. Even if one conservatively assumes each of these transactions to require 30 minutes of citizens' time at minimum wage ($9.10/hour), that equates to nearly $1200 / day – or approximately $300,000 / work year – in benefit to the general Oregon economy in the form of Public Value.

Solution Alternatives

Available Solution Alternatives. Solution strategies available to OLCC can be analyzed using the following decision tree (see Figure 1), which identifies the basic strategic options available to OLCC.

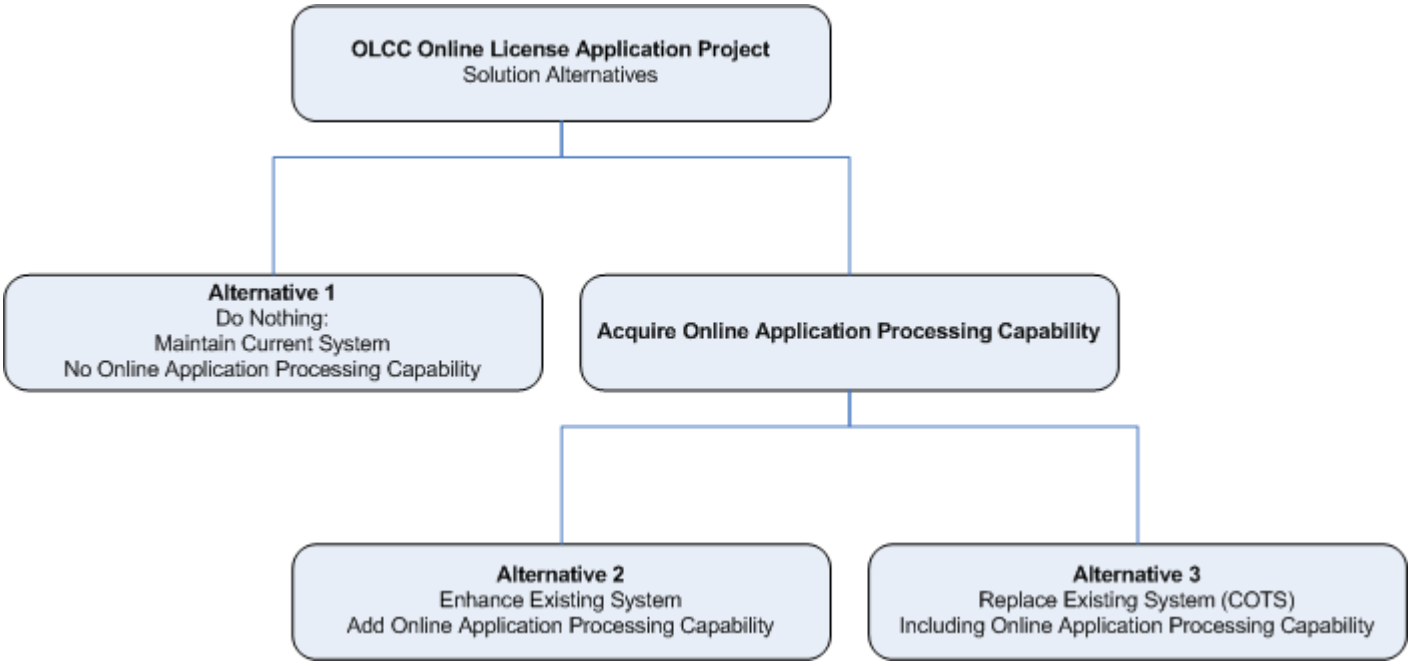

Figure 1. Decision tree for solution alternatives available to OLCC

The three solution alternatives identified above represent three scenarios for implementing the project:

1. *Do nothing.* Acquire no new system and continue to maintain the current system as is with no online application processing capability and; therefore, no derivative increases in customer service, information availability or processing efficiency.
2. *Enhance Existing System.* Implement an enhancement to the existing system to provide online application processing.
3. *Replace Existing System (COTS).* Implement a complete COTS licensing system replacement, including online application processing. It is assumed that this implementation would be phased to particular sets of requirements; however, it is also assumed that all potentially common requirements would be considered during the initial phase and that there would be required several sub-projects to capture future requirements.

Elimination of Alternative 1. Alternative 1 is the "Do Nothing" option which, in essence, ignores the business drivers as well as the anticipated financial and non-financial benefits outlined previously. In this scenario, OLCC would continue to operate "as-is" – processing license and service permit applications and associated fees manually. There would be no efficiencies gained from reduction in manual work or elimination of paper stocks or postage. While OLCC's workload would naturally continue to increase, without additional staff to take up the increased workload, turn-around times and, thus, customer service would suffer. This would also indirectly impact the greater Oregon economy by OLCC's continuing to take ever greater time to process license and service permits while still requiring applicants to expend undue resources to facilitate the process by visiting OLCC in person, mailing checks, etc.

Based on the fact that OLCC estimates a direct financial benefit of $1.35M over five years and a payback period of just over four years for solution alternative #2 – in addition to OLCC's strategic mission to promote Oregon's economic growth by providing efficiencies to constituents – OLCC management dismissed this option from consideration.

Comparison of Alternatives 2 and 3. Alternatives 2 and 3 are solution approaches that result in the implementation of an online regulatory processing system. They are as follows:

2) Implement online regulatory system as an enhancement to OLCC's existing regulatory management systems
3) Implement online regulatory system as a component of a COTS regulatory management system replacement

Qualitative Comparison

The following table summarizes the qualitative differences between the alternatives across several analysis criteria

Table 3. Qualitative and Quantitative Comparison Criteria – Enhancement vs. Replacement

Criteria	2 – Enhancement	3 – Replacement
Cost	**Medium**: Estimate $250,000 for contract development + $266,000 for additional state staff involvement.	**High**: Estimate minimum $1,000,000 for basic licensing, not including enforcement, education, adjudication, etc + an additional $444,000 for state staff involvement.
Scope	**Small**: Enhancement is targeted at specific, identified problem of providing Online License and Service Permit Applications including E-Commerce	**Large**: Replacement would be broad and expansive, targeting all regulatory processes. Phased approach would be used, but it is likely that common requirements analysis would be performed up-front to minimize re-work and facilitate development of anticipated unique gaps, e.g. Spirits and Tax systems integration.
Complexity	**Medium**: Project requires complex logic to calculate required forms, but relatively simple interfaces to existing systems.	**High**: Project requires implementation of large number of complex business requirements across functional programs, including unique system integrations with Spirits and Tax systems.
Risk	**Low**: Low cost coupled with small scope, medium complexity and known set of requirements (existing application forms) equate to relatively low risk	**High: High cost coupled with large scope, high complexity and unknown future requirements (marijuana? retail hybridization?) equate to high risk**
Development Time	**Low**: Estimate 2 Years	**High**: Estimate 3-4+ Years
Process Disruption	**Medium**: OLCC understands and controls interfaces to existing systems, which remain largely unchanged; however, certain processes such as fee processing change dramatically	**High**: All business processes are expected to change drastically
Fit / Gap	**Fit**: Custom solution is built exactly to business requirements	**Gap**: COTS systems typically introduce gaps which must either be filled through customization or business requirements change (e.g. initiative, statute or administrative rule)
Flexibility	**High**: Highly flexible given development resource availability	**Medium-High**: Assume high level of flexibility given configuration capability and development budget
Payback Period	~4.5 Years	>5 Years
5 Year ROI	13%	-52%

*Conclusion of Qualitative Comparison***.** It is anticipated that Alternative 2 achieves the stated goal – Online License and Service Permit Application processing with E-Commerce – with lower cost, smaller scope, less complexity, faster time-to-market and, ultimately, lower risk. This is in large part because Alternative 2 is a *targeted* project *focused* on *doing one thing and doing it well (i.e. online application submission)*, as opposed to Alternative 3, which represents wholesale system replacement and is; therefore, extremely large in scale and systemic by nature.

Direct Financial Benefit

OLCC has performed a comprehensive financial benefit analysis to understand the direct net benefits to the agency of implementing alternatives 2 or 3. The full financial benefit analysis is available in Appendix A – Financial Benefit Analysis. OLCC's financial benefit analysis includes detailed estimated savings per task as well as estimated development, implementation, maintenance and operational costs. The results of the financial benefit analysis have been summarized in Table 5 below.

Table 5. Cost/Benefit Summary for Alternative 2 vs Alternative 3

Expected Cost (5 years)	**2-Enhancement**	**3-Replacement**
Development (Including design and implementation)		
Hardware	$ -	$ -
Software	$ -	$ 250,000
Services (Development, Project Management, etc)	$ 250,000	$ 750,000
Other (e.g. state staff)	$ 266,000	$ 444,000
Development Sub-Total	*$ 516,000*	*$ 1,444,000*
Business Transition		
Transition planning & implementation	$ 16,000	$ 164,000
Staff Training	$ 16,000	$ 328,000
Business Transition Sub-Total	$ 32,000	$ 492,000
Total Implementation Costs	**$ 548,000**	**$ 1,936,000**
Hosting, Support & Maintenance (5 Years)		
Maintenance Contracts	$ -	$ 250,000
Support Staff	$ 368,394	$ 368,394
Hosting Services	$ -	$ -
Hosting, Support & Maintenance Sub-Total	*$ 368,394*	*$ 618,394*
Transaction Costs		
Estimated Credit Card Fees	$ 275,000	$ 275,000
Transaction Costs Sub-Total	*$ 275,000*	*$ 275,000*
Total Expected Cost (5 Years)	**$ 1,191,394**	**$ 2,829,394**
Expected Benefits (5 Years)		
Agency Productivity Gain	$ 1,348,818	$ 1,348,818
Total Expected Benefit (5 Years)	*$ 1,348,818*	*$ 1,348,818*
Net Benefit	**$ 157,424**	**$ (1,480,576)**
ROI	**13%**	**-52%**

Financial Benefit Conclusion. It is clear from the cost benefit analysis above that solution alternative 2 – Enhancement provides a greater net benefit within the 5 year ROI horizon, with a payback period of approximately 4.5 years.

Indirect Financial Benefit – Public Value

- What is an Oregonian's time worth?
- What is the cumulative time of Oregonians worth?
- What is the benefit to the greater Oregon economy by doing business online?

OLCC understands that the agency does not operate of its own accord in a vacuum. OLCC exists to serve the citizens of Oregon by maintaining public safety and fostering economic growth related to the sales and service of alcoholic beverages. By not providing an online processing capability for license and service permits, OLCC is requiring constituents to interact with the agency in a more costly way: either by post or in person by traveling to an OLCC office. Even if an applicant mails in an application, they must manually obtain the forms or print them online, purchase an envelope and postage and drop them in the mail. Further, in the case of new license applications, the applicant is typically required to physically travel to an OLCC field office to deliver payment.

Assuming, very conservatively, that OLCC can save a citizen, on average, 30 minutes of time on any given transaction and further assuming a conservative estimate of citizens' time at only minimum wage, the potential savings to the public is clear:

Public Benefit - Indirect Financial Benefit to Oregon's Economy

Year	2018	2019	2020	2021	2022
New Licenses	2911	2940	2969	2999	3029
Renewals	14452	15031	15632	16257	16907
Service Permits	48381	50800	53340	56007	58807
Total Transactions	65744	68770	71941	75263	78743
Average Daily Transactions	263	275	288	301	315
Estimated Minutes per Transaction	30	30	30	30	30
Minimum Wage	$ 9.10	$ 9.10	$ 9.10	$ 9.10	$ 9.10
Public Benefit per Working Day	$ 1,196.54	$ 1,251.61	$ 1,309.32	$ 1,369.78	$ 1,433.13
Public Benefit per Year	*$ 299,134.28*	*$ 312,903.68*	*$ 327,329.96*	*$ 342,444.84*	*$ 358,281.61*
Total 5 Year Public Benefit (Time x Wage x # Transactions)	**$ 1,640,094.37**				

OLCC estimates that the implementation of an online license and service permit application system with e-payment will indirectly save the state economy approximately $1.64M over the course of 5 years, based on the cost savings enjoyed by the public based on the previous assumptions.

Non-Financial Benefits

Beyond the more readily quantifiable financial benefits, OLCC also recognizes that there are several non-financial benefits associated with the creation of an online license and service permit application processing system.

Electronic Availability of Application Data

Today, OLCC's license and service permit applications are submitted purely on paper either in person or through the mail. These applications must be manually processed at intake into the agency and then routed to the appropriate party to begin processing through OLCC's application workflow. By capturing application data electronically, this data will be available for assignment and processing earlier than is possible now as OLCC intends to provide full electronic access to submitted applications for OLCC's license and service permit staff.

The application data that would be captured electronically also constitutes the majority of the data that is currently being physically stored using OLCC's "Lektriever" filing carousel, and which is regularly updated using a manual typewriter. By capturing this information electronically, OLCC will be in a position to use this data in the future to begin phasing out the Lektriever. **Note***: the proposed enhancement (POP) in 2015-2017 does not deliver the elimination of the Lektriever, it only provides the data necessary to do so.*

Improved Information Accuracy

Currently, applications cannot be checked for even basic validity – completeness and correctness – until after the application is received and routed to a specialist in the licensing division. In the case that an application is incorrect, the applicant must be notified manually and, in many cases, the application must resubmitted until it is correct. By enabling the process online, the information submitted by the applicant can automatically be guaranteed complete and many aspects of the information can also be determined to be correct – this is especially true in the case of license renewals, where OLCC has pre-existing information about the license and licensee. This will result in improved information accuracy through the reduction of human error in processing.

In addition, the integration and automation of the proposed enhancement with OLCC's existing back-office systems will result in greatly improved statistical tracking accuracy at license intake, which OLCC does not have today.

Enhanced Customer Convenience

OLCC's customers must currently either travel to an OLCC location or download application forms on the web in order to obtain a license or service permit application. In the case that a customer downloads the forms from the web, the customer must still fill out the form, print it and either mail in the form or physically deliver it to an OLCC location during regular business hours. However, OLCC's proposed online system will be available 24 hours per day, 7 days per week and will be accessible from standard computer browsers as well as any modern mobile device. Further, the proposed online system will be developed with an intuitive user interface designed to "guide" the user through OLCC's complex licensing process in a manner that eliminates the need for the licensee to work with staff over the phone to both determine which application forms they need as well as work through filling them out successfully.

Additionally, the online system will be capable of automatically populating pre-existing license information for renewals to facilitate a faster, more convenient process where the license information has not changed significantly in the previous license period.

Improved Inter-Governmental Data Sharing

The proposed online application system will be built using contemporary web services technologies, which will present the opportunity for automated sharing and distribution of OLCC's license and service permit application data with other governmental partners in a manner that has not existed previously. For example, OLCC shares license and service permit data with Oregon DOJ and Lottery as well as local governments throughout the state. This data sharing is currently performed using a combination of manual processing and secure file sharing, as opposed to using modern web technologies.

Features of Current vs. Future System. Based on the previous deficiency and anticipated needs analysis as well as an analysis of existing capability and as summarized in Table 4 below, the Future System that satisfies OLCC's business requirements must exhibit certain features in support of OLCC's business processes.

Table 4. System Features in terms of business processes supported.

Features of OLCC Licensing System	Current	2 – Enhance	3 – Replace
Provide Back Office Processing Capability Provide ability to: • Collect • Process • Issue • Suspend • Renew Licenses and Service Permits	X	X	X
Capture ALL OLCC License Application Information • Provide ability to capture ALL data elements required for ALL license and service permit applications		X	X
Provide OLCC Reporting Capability • Ability to Create Custom Reports	X	X	X
Integrate with Existing Regulatory Systems Reduce Manual Entry / Auto Populate: • Cashier System • CaseTracker System • iEnforce Mobile System	**Cashier:Yes** **CaseTracker: Limited** **iEnforce: Yes**	X	**N/A** **(Assume Replace)**
Provide Online Application Input with E-Commerce Payment Capability • Calculate Required Forms/Data Elements based on OLCC License, Business Structure and Ownership Types (e.g. TurboTax) • Calculate License / Service Permit Fees		X	X
Ability Integrate and Provide Online Privilege Tax Collection (Beer, Wine, Future Product) Future capability to provide: • Production Input • Validation • Tax Calculation • Payment • Audit	X	X **(via Back-Office)**	**Unknown**
Ability to Integrate with OLCC Merchandising System Future capability to track: • Production • Shipment • Sale • Inventory • Destruction of regulated product(s)	X	X **(via Back-Office)**	**Unknown**

Current vs. Future System Conclusion. While either solution alternative will provide OLCC with the desired online processing and payment capability, it is OLCC's position that solution alternative 2 – Enhancement, provides the greatest fit, especially with consideration given to *potential* future requirements such as Tax Collection and integration with OLCC's existing Merchandising Business System.

Risk Comparison

There are several significant risks associated with either of the two solution alternatives that were considered. Risks were evaluated using a standard set of risk criteria as well as project and agency-specific risk criteria. Each criteria was scored based on the severity and the likelihood as outlined in the risk assessment framework in Table 6 and then summarized into an aggregate risk score to represent total risk associated with each solution alternative.

Table 6. Risk Assessment Framework

Impact	**High**	7	8	9
	Medium	4	5	6
	Low	1	2	3
		Low	**Medium**	**High**
		Probability		

Table 7. Risk Assessment

Risk Criteria	**2 – Enhance**	**3 – Replace**
Scope	4	9
Procurement	4	6
Budget	4	8
Schedule	7	9
Complexity	5	9
Functional Gaps (Incl. Anticipated Business Needs)	3	9
Aggregate Risk Score	27	50

Conclusion of Risk Assessment. The following conclusions are drawn from applying the risk framework referenced above.

Scope: The scope of the enhancement option is, by definition, narrower than that of replacement. The smaller scope of the enhancement option naturally leads to decreased risk of scope change. In fact OLCC believes the scope of enhancement is well defined and the probability of scope change is LOW, though with a MEDIUM impact should scope change occur.

Conversely, the scope of full replacement is currently ill-defined and with unknown future requirements, it is not even possible to properly assess the true risk of replacement. This unknown quality leads OLCC to view the probability of scope change issues as being HIGH with a HIGH impact.

Procurement: The enhancement option requires only the procurement of contract development resources – a well understood and streamlined procurement process. OLCC views contract development procurement as having a LOW probability of issue, but a MEDIUM impact should issues arise. OLCC recognizes the potential for impact due to the "recruitment" process nature of procuring contract developers.

Procurement of a replacement system is a completely different process. OLCC anticipates several months of time dedicated to development of an RFP, solicitation, evaluation and selection, and contracting. The scope of the procurement process coupled with the scope of the system in question necessarily makes the probability of issues in the procurement process HIGH and the impact of any such issues MEDIUM, at the least.

Budget: The enhancement alternative requires a relatively small development budget at $250,000 vs. an anticipated replacement budget of $750,000 minimum which, in reality, is likely > $1M. Due to the differences in scope, complexity and anticipated budget allocation, OLCC views the enhancement option as having a LOW probability of incurring budget issues and a MEDIUM impact should issues occur and the replacement option as having a HIGH probability of encountering budget issues with a HIGH impact.

Schedule: Again, due to the narrow scope, small budget and low complexity, the enhancement alternative is considered to have a LOW probability of encountering schedule issues; however, should major schedule problems occur for any reason, the impact would be HIGH given the potential for tight future project time lines and resource loads related to new projects as the result of anticipated future business requirements.

The replacement alternative presents similar schedule risks as the enhancement option; however, due to the greater scope, budget and complexity, OLCC views the replacement option as having HIGH probability of schedule issues with a HIGH impact, for similar reasons. For example, and only for anecdotal reference, one of OLCC's control state peers is starting a full COTS license replacement project in 2014 with a time line of 4 years and a budget of $4.5M.

Complexity: Given the narrow scope and OLCC's existing knowledge of internal systems and interface requirements, OLCC views the enhancement option as having a MEDIUM probability of encountering issues related to complexity and a MEDIUM impact should those issues arise. OLCC staff are knowledgeable and experienced in designing and building web technologies and well equipped to design the proposed enhancement using appropriate patterns and practices.

Due to the large scope, the complex nature of OLCC's business requirements, and questions of functional fit, OLCC views the complexity of the replacement option as having a HIGH probability of encountering issues related to complexity and a HIGH impact should issues occur.

Functional Gaps: Based on the potential for new future requirements[3], OLCC views the enhancement alternative as carrying a HIGH probability of challenging OLCC with functional gaps in the future (e.g. additional online forms will almost certainly need to be developed according to future requirements based on anticipated business needs); however, based on the short time frame, limited scope, limited complexity and custom nature of the enhancement option, OLCC also views these gaps as representing a LOW impact. OLCC intends to design the enhancement for the easy addition of new application forms for new license types as need be.

With regard to replacement, OLCC view this options as presenting both a HIGH probability of introducing large functional gaps and HIGH impact should those gaps materialize. OLCC arrives at this conclusion based primarily on the intrinsic budget risk, larger and more extensive scope, and greater complexity of an end-to-end style solution. I.e. OLCC anticipates that, in order to provide an online system – which may in and of itself include gaps – we will encounter many gaps in implementing system components that are prerequisite to the online component.

Conclusion and Solution Approach Selected

OLCC management has identified a specific operational problem – lack of online regulatory application processing – and has invested effort to research the current and projected cost of operations given manual processes due to existing deficiencies. In analyzing solution alternatives to mitigate the problem, OLCC has considered anticipated future business needs, functional requirements of OLCC's processes, qualitative and quantitative differences, risks and ultimately a financial model based on the cost of each alternative compared to the projected savings the solution would generate. Based on the information gleaned through this effort, OLCC management has determined that Solution Alternative 2 – Enhancement – is the most effective choice; thus, OLCC management has decided that solution alternative 2 will be selected.

Summary of 2015 Proposed Legislation Affecting OLCC

Legislation that impacts OLCC programs:

HB 2480 – Liquor License Application Fee

Establishes application fee for Oregon Liquor Control Commission processing of certain license applications.

SB 417 – Tobacco Retailers Licensed by OLCC

Requires premises where person makes retail sales of tobacco products and inhalant delivery systems to be licensed by Oregon Liquor Control Commission. Requires imposition of fees on licensees that are reasonably calculated to pay for administering provisions of Act. Prohibits certain types of retail sales of tobacco products and inhalant delivery systems. Establishes Tobacco Control Fund and continuously appropriates moneys in fund to Oregon Liquor Control Commission for purposes of administering provisions of Act. Becomes operative January 1, 2016. Declares emergency, effective on passage.

HB 2803 – Bottle Redemption Centers

Requires Oregon Liquor Control Commission to include certain information in orders approving beverage container redemption centers. Requires commission to provide certain notices to dealers within convenience zones for beverage container redemption centers. Requires dealers that are within convenience zones for beverage container redemption centers but that do not participate in redemption centers to meet certain requirements. Requires commission to inspect premises of certain dealers to ensure compliance. Punishes noncompliance with provisions applying to dealers that do not participate in redemption centers with temporary suspension of liquor license.

SB 141 – Liquor Agent Business Losses

Provides for Oregon Liquor Control Commission to pay business loss compensation to liquor store operator for diminishment in sales resulting from change in system for selling distilled liquor. Declares emergency, effective on passage.

HB 2671 – Funding for Sobering Centers

Increases fees for certain off-premises sales licensees. Makes increase applicable for annual license periods beginning on or after January 1, 2016. Establishes Sobering Center Support Fund to receive amounts from fee increases as directed by Oregon Liquor Control Commission. Continuously appropriates moneys to commission for use in payments to counties to provide financial support for sobering centers. Declares emergency, effective on passage.

HB 2932 – State Police Funding

Establishes State Police Patrol Fund, separate and distinct from General Fund. Redirects state share of Oregon Liquor Control Commission Account surplus money distribution to State Police Patrol Fund. Continuously appropriates State Police Patrol Fund moneys for establishing, maintaining and meeting certain needs of state police patrol stations. Limits State Police Patrol Fund to amount necessary to maintain patrol officer staffing levels near national average. Distributes excess State Police Patrol Fund moneys to cities and counties. Declares emergency, effective July 1, 2015.

Legislation that impacts Oregon's alcohol industry:

HB 2568 – Oregon Spirits Board

Establishes Oregon Spirits Board. Authorizes or requires board activities for purpose of supporting Oregon distilled liquor industry. Requires board to establish state distilled liquor room for purposes of quality improvement, providing tastings to public and providing distilled liquor for state functions and official gifts. Establishes Oregon Spirits Board Fund for use by board. Directs moneys to fund from Oregon Liquor Control Commission Account.

HB 2567 – Distillery Tasting Rooms

Authorizes appointment of distillery licensee as distillery retail outlet agent for distiller consenting to appointment. Allows distillery licensee to conduct tastings and sales of distilled liquor produced by distiller for which distillery licensee is distillery retail outlet agent. Allows compensation agreement between distiller and distillery licensee acting as distillery retail outlet agent of distiller.

SB 138 – Self-Distribution Limits for Brew Pubs

Removes production limit for brewery-public house licensee selling malt beverages, produced by licensee at wholesale, to other licensees of Oregon Liquor Control Commission.

HB 2731 – Malt Beverage Delivery to Consumer

Authorizes holder of off-premises sales license or direct shipper permit to deliver malt beverages for delivery to consumer or to ship malt beverages for delivery to consumer.

SB 583 – Brew Pub and Distillery Package

Allows brewery-public house licensee to also hold off-premises sales license under certain circumstances. Allows brewery-public house licensee to import malt beverages for which licensee controls brand. Establishes Oregon Spirits Board. Authorizes or requires board activities for purpose of supporting Oregon distilled liquor industry. Requires board to establish state distilled liquor room for purposes of quality improvement, providing tastings to public and providing distilled liquor for state functions and official gifts. Establishes Oregon Spirits Board Fund for use by board. Directs moneys to fund from Oregon Liquor Control Commission Account. Allows distillery licensee to purchase distilled liquor directly from manufacturer for purposes of blending or manufacturing.

Provides that distillery licensee must hold federal distilled spirits plant basic permit to exercise certain privileges of license. Authorizes appointment of distillery licensee as distillery retail outlet agent for distiller consenting to appointment. Allows distillery licensee sales of distilled liquor produced by distiller for which distillery licensee is distillery retail outlet agent. Allows agreement between distiller and distillery licensee acting as distillery retail outlet agent of distiller for resulting expenses of agent, subject to Oregon Liquor Control Commission approval and oversight. Allows distillery licensee to offer tastings of distilled liquor manufactured by any distiller and to offer tastings as mixed drinks. Eliminates requirement that distilled liquor used for tastings be purchased from commission. Provides for payment of processing fee to commission if distilled liquor used for tastings is transferred by manufacturer from inventory of commission. Allows distillery licensee holding special events distillery license to conduct event at distillery premises. Deletes requirement regarding licensee purchase price for distilled liquor licensee sells in factory sealed containers at special event. Declares emergency, effective on passage.

HB 4131 Report – Staff to Supervisory Ratio

HB 4131 the law requiring agencies to establish a schedule for reaching an “11 to1” non-supervisory to supervisory ratio became effective last biennium.

The OLCC employing more than 100 budgeted positions is subject to HB 4131. The OLCC is required to increase the staff to supervisor ratio by one each year until the agency reaches the “11 to1” ratio requirement.

The OLCC has been working diligently to meet this objective. In each of the last two years of the biennium we are pleased to report we met the requirement for improving our ratio by one before the October deadline.

As of October 2014 we had achieved a “10 to 1” ratio with 206 non-supervisory positions to 21 supervisor positions.

During the 2013-15 biennium, in order to meet our objective, we abolished one PEM/B manager position within the Distribution Center, abolished a PEM/F Manager position in the Management Consultant/Administrative Services Program, reclassified a PEM/E Manager position in Communications & Government Affairs to a non-supervisory position and reclassified a PEM/D Manager position in Information Services to an ISS8 represented position.

OLCC will continue to follow the directive to achieve the required staff to supervisor ratios according to schedule.

OLCC	**Reclassifications**			
				Monthly
Position #	**Department**	**Original Classification**	**New Classification**	**Salary Difference**
1100.516	License Services	Public Service Rep 3	Office Specialist 2	40.00
2500.008	Financial Services	Accounting Technician 2	Accounting Technician 3	0.00
3000.086	Distilled Spirits	Program Analyst 2	Program Analyst 1	(711.00)
2600.687	Information Services	Information Systems Specialist 3	Information Systems Specialist 4	355.00
2600.51O	Information Services	Information Systems Specialist 5	Information Systems Specialist 6	303.00
2600.086	Information Services	PEM-D	Information Systems Specialist 8	0.00
3000.266	Distribution Center	Liquor Distribution Worker 2	General Maint. Mechanic	69.00
1000.002	Administration	Executive Support Spec 2	Executive Assistant	1,062.00
4700.654	Public Safety	Administrative Specialist 1	Administrative Specialist 2	230.00
4700.607	Public Safety	PEM-G	PEM-F	(992.00)
3000.025	Distribution Center	PEM-A	PEM-B	205.00
3000.241	Distribution Center	PEM-A	PEM-B	189.00
	Total Monthly Budgetary Effect			**750.00**
	New Hires			
Position #	**Class/Title**	**Description**	**Hired Salary Step**	**Notes**
3000086	PROGRAM ANALYST 2	New Hire	03	
1500014	GROUNDS MAINTENANCE WORKER 2	New Hire	01	
4700785	OFFICE SPECIALIST 2	New Hire	01	
3000234	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000031	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
8010406	OPERATIONS & POLICY ANALYST 3	New Hire	02	
4700073	ADMINISTRATIVE SPECIALIST 1	New Hire	02	
3000266	GENERAL MAINTENANCE MECHANIC	New Hire	06	Qualifications & Closely matching to current salary
3000236	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
4500116	OFFICE SPECIALIST 2	New Hire	02	
3000231	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000207	LIQUOR DISTRIBUTION EQUIP OPER	New Hire	01	
4700607	PRINCIPAL EXECUTIVE/MANAGER F	New Hire	09	Exceptional qualifications
4700073	ADMINISTRATIVE SPECIALIST 1	New Hire	01	
3000030	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000233	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000151	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000014	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
5500059	OPERATIONS & POLICY ANALYST 2	New Hire	01	
4000004	PROGRAM ANALYST 2	New Hire	04	Candidate's qualifications and current salary
5500561	COMPLIANCE SPECIALIST 3	New Hire	04	Candidate's qualifications and current salary
4500517	PRINCIPAL EXECUTIVE/MANAGER E	New Hire	08	Exceptional qualifications
3000235	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000232	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000028	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
4700055	ADMINISTRATIVE SPECIALIST 1	New Hire	02	
4500116	OFFICE SPECIALIST 2	New Hire	02	
4000001	ADMINISTRATIVE SPECIALIST 1	New Hire	04	Qualifications & Closely matching to current salary
1500019	SUPPLY SPECIALIST 1	New Hire	01	
4700556	LIQUOR REGULATORY SPECIALIST	New Hire	03	Qualifications & Closely matching to current salary
3000015	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
4700627	LIQUOR REGULATORY SPECIALIST	New Hire	02	
4700037	ADMINISTRATIVE SPECIALIST 1	New Hire	05	Closely matching to current salary
4700560	OFFICE SPECIALIST 2	New Hire	01	
1100010	PRINCIPAL EXECUTIVE/MANAGER E	New Hire	09	Exceptional qualifications
1600707	RESEARCH ANALYST 4	New Hire	02	
4700545	LIQUOR REGULATORY SPECIALIST	New Hire	02	
3000013	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000268	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
3000003	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
4500512	OFFICE SPECIALIST 1	New Hire	02	
1000021	HUMAN RESOURCE ASSISTANT	New Hire	02	
3000028	LIQUOR DISTRIBUTION WORKER 1	New Hire	01	
4700544	LIQUOR REGULATORY SPECIALIST	New Hire	08	Matching current salary
5500150	PRINCIPAL EXECUTIVE/MANAGER E	New Hire	08	Qualifications & Closely matching to current salary
4700653	LIQUOR REGULATORY SPECIALIST	New Hire	02	
1500005	FACILITY ENERGY TECHNICIAN 2	New Hire	01	

Office of the Secretary of State

Kate Brown
Secretary of State

Robert Taylor
Deputy Secretary of State

Audits Division

Gary Blackmer
Director

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Salem, OR 97310

(503) 986-2255
fax (503) 378-6767

COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE
For the Oregon Liquor Control Commission

To the Oregon Liquor Control Commission

We have performed audit work of selected accounts at the Oregon Liquor Control Commission (commission) as of and for the year ended June 30, 2014. This audit work was not a comprehensive financial audit of the commission, but was performed as part of our annual audit of the State of Oregon's financial statements. Professional standards require that we provide you with the following information related to our audit.

Our Responsibility under Auditing Standards Generally Accepted in the United States of America

As stated in our engagement letter dated June 2, 2014, our responsibility, as described by professional standards, is to form and express an opinion about whether the State of Oregon's financial statements are fairly presented, in all material respects, in conformity with accounting principles generally accepted in the United States. Our audit work at the commission will, in part, allow us to achieve this objective. Our audit of the State of Oregon's financial statements does not relieve you or management of your responsibilities.

Our responsibility is to plan and perform the audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits in *Government Auditing Standards,* and to design the audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the commission's internal control over financial reporting. Accordingly, we considered internal control solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that, in our professional judgment, are relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We performed the audit according to the planned scope and timing previously communicated via our engagement letter and discussion with management during our audit.

Significant Findings or Issues

We did not identify any significant findings as a result of our audit.

Qualitative Aspects of Accounting Practices

Accounting Policies

Management is responsible for the selection and use of appropriate accounting policies and following state policy. No new accounting policies were adopted and there were no changes in the application of existing policies during the fiscal year. For the accounts audited, we are not aware of any significant concerns about the application of accounting policies.

Financial Statement Disclosures

The disclosures prepared by management and provided to SARS for inclusion in the State of Oregon CAFR are consistent, clear and understandable.

Significant Difficulties Encountered During the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all factual, projected, and judgmental misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. We did not identify any misstatements during our audit.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Other Findings or Issues

No other findings or issues came to our attention that are significant and relevant to those charged with governance regarding their responsibility to oversee the financial reporting process.

Management Representations

We have requested and received certain written representations from management that are included in the management representation letter dated December 16, 2014.

Management Consultation with Other Independent Auditors

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. To our knowledge, there were no such consultations with other accountants.

This communication is intended solely for the information and use of the Commissioners of the Oregon Liquor Control Commission and management of the commission and is not intended to be and should not be used by anyone other than these specified parties.

OREGON AUDITS DIVISION
December 29, 2014

Oregon
John A. Kitzhaber, MD, Governor

Liquor Control Commission
9079 SE McLoughlin Blvd
Portland, OR 97222-7355
(503) 872-5000
(800) 452-6522

December 16, 2014

Gary Blackmer, Director
Secretary of State, Audits Division
255 Capitol Street N.E., Suite 500
Salem, Oregon 97310

Dear Mr. Blackmer:

This representation letter is provided in connection with your audit of the State of Oregon's financial statements as of and for the year ended June 30, 2014 and the related notes to the financial statements. The Oregon Liquor Control Commission (commission) submits financial information to the Department of Administrative Services for the preparation of the State of Oregon's financial statements and related notes. The audit is being conducted for the purpose of expressing an opinion as to whether the financial statements present fairly, in all material respects, the financial position as of June 30 2014, the respective changes in financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement.

We confirm, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves, as of December 16, 2014:

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement letter dated June 2, 2014, for the preparation and fair presentation of the financial statements accordance with U.S. GAAP.

2. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

3. We acknowledge our responsibility for the design, implementation, and maintenance of internal controls to prevent and detect fraud.

4. Significant assumptions we used in making accounting estimates, including those measured at fair value, are reasonable.

5. Related party relationships and transactions have been appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP.

6. No events have occurred subsequent to the balance sheet date and through the date of this letter that would require adjustment to or disclosure in the financial statements.

7. The effects of all known actual or possible litigation and claims have been accounted for and disclosed in accordance with U.S. GAAP.

8. We have provided you with:

   (a) Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, and other matters.

   (b) Additional information that you have requested from us for the purpose of the audit.

   (c) Unrestricted access to persons within the entity whom you determined it necessary to obtain evidence.

9. All transactions have been recorded in the accounting records and are reflected in the financial statements and the schedule of expenditures of federal awards.

10. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.

11. We have no knowledge of any fraud or suspected fraud that affects the agency and involves:

   (a) Management;

   (b) Employees who have significant roles in internal control; or

   (c) Others when the fraud could have a material effect on the financial statements.

12. We have no knowledge of any allegations of fraud, or suspected fraud, affecting the agency's financial statements communicated by employees, former employees, analysts, regulators, or others.

13. We have no knowledge of any instances of noncompliance or suspected noncompliance with laws, regulations, or provisions of contracts and grant agreements whose effects should be considered when preparing financial statements.

14. We are not aware of any pending or threatened litigation and claims whose effects should be considered when preparing the financial statements.

15. We have disclosed to you the identity of the commission's related parties and all related party relationships and transactions of which we are aware.

16. We are responsible for compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to us, including tax or debt limits and debt contracts; and we have identified and disclosed to you all laws, regulations and provisions of contracts and grant agreements that we believe have a direct and material effect on the determination of financial statement amounts, or other financial data significant to the audit objectives.

17. There are no violations or possible violations of laws and regulations, provisions of contracts and grant agreements, debt limits, and any related debt covenants whose effects should be considered for disclosure in the financial statements, or as a basis for recording a loss contingency, or for reporting on noncompliance.

18. Provisions for uncollectible receivables have been properly identified and recorded.

19. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.

20. The commission has satisfactory title to all owned assets, and there are no unrecorded liens or encumbrances on such assets nor has any asset been pledged as collateral.

21. The commission has no plans or intentions that may materially affect the carrying value or classification of assets, liabilities, or equity.

22. Interfund, internal, and intra-entity activity and balances have been appropriately classified and reported.

23. Components of fund balance (nonspendable and restricted, committed, assigned and unassigned) are properly classified.

Signature

Steve Marks, Executive Director

Signature

Patricia Miles
Assistant Director, Financial Services

Signature

Debbie Amsberry
Assistant Director, Financial Services

Secretary of State Audit Report

Kate Brown, Secretary of State

Gary Blackmer, Director, Audits Division

Oregon Liquor Control Commission: Revenue Cycle Financial Controls

Summary

The objectives of our audit were to determine the effectiveness of Oregon Liquor Control Commission's (OLCC) financial controls related to its revenue cycle (collection and distribution), and determine its compliance with key legal requirements. We reviewed agency controls related to revenue collections, revenue distributions, and inventory. Based upon observation and test procedures performed, we concluded that controls over the collection and distribution of sales and tax revenue and over inventory were applied and effective. In addition, our legal compliance testing identified no instances of noncompliance.

Agency Response

The agency response is attached at the end of the report.

Oregon
John A. Kitzhaber, MD, Governor

Liquor Control Commission
9079 SE McLoughlin Blvd
Portland, OR 97222-7355
(503) 872-5000
(800) 452-6522

June 19, 2013

Gary Blackmer, Director
Oregon Audits Division
Secretary of State
Public Service Building, Ste 500
Salem, Oregon 97301

Dear Director Blackmer:

This month your division's audit team, headed by Deputy Director Mary Wenger, completed its review of the Oregon Liquor Control Commission's (OLCC) revenue cycle's financial controls. The Commission has reviewed the audit letter and acknowledges that the audit found internal controls were "applied and effective". Additionally, we note that legal compliance testing found no instances on non-compliance.

Our agency values the independent role of the audit in ensuring stewardship of state assets. We appreciated the audit team's professionalism in conducting the evaluation. Your audit report reassures us that OLCC is indeed fulfilling its responsibilities in revenue cycle controls.

Sincerely,

Merle Lindsey
Interim Executive Director
OLCC

Office of the Secretary of State

Kate Brown
Secretary of State

Barry Pack
Deputy Secretary of State

Audits Division

Gary Blackmer
Director

255 Capitol St. NE, Suite 500
Salem, OR 97310

(503) 986-2255
fax (503) 378-6767

December 30, 2013

COMMUNICATION WITH THOSE CHARGED WITH GOVERNANCE
For the Oregon Liquor Control Commission

To the OLCC Commissioners and OLCC management:

We have audited select accounts at the Oregon Liquor Control Commission (OLCC) as part of our audit of the State of Oregon's financial statements as of and for the year ended June 30, 2013, and have issued our report thereon dated December 30, 2013. Professional standards require that we provide you with the following information related to our audit.

Our Responsibility under Auditing Standards Generally Accepted in the United States of America

As stated in our engagement letter dated September 24, 2013, our responsibility, as described by professional standards, is to form and express an opinion about whether the State of Oregon's financial statements are fairly presented, in all material respects, in conformity with accounting principles generally accepted in the United State. Our audit of select accounts at OLCC does not relieve you or management of your responsibilities.

Our responsibility is to plan and perform the audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits in *Government Auditing Standards,* and to design the audit to obtain reasonable, rather than absolute, assurance about whether the financial statements are free of material misstatement. An audit of financial statements includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Commission's internal control over financial reporting. Accordingly, we considered internal control solely for the purpose of determining our audit procedures and not to provide any assurance concerning such internal control.

We are also responsible for communicating significant matters related to the audit that, in our professional judgment, are relevant to your responsibilities in overseeing the financial reporting process. However, we are not required to design procedures for the purpose of identifying other matters to communicate to you.

Planned Scope and Timing of the Audit

We performed the audit according to the planned scope and timing previously communicated via our engagement letter and discussion with management during our audit.

Significant Findings or Issues

We did not identify any significant findings as a result of our audit.

Qualitative Aspects of Accounting Practices

Accounting Policies

Management is responsible for the selection and use of appropriate accounting policies. No new accounting policies were adopted and there were no changes in the application of existing policies during the fiscal year. We noted no transactions entered into by the Commission during the year for which there is a lack of authoritative guidance or consensus. There are no significant transactions that have been recognized in the financial records in a different period than when the transaction occurred.

Financial Statement Disclosures

The disclosures prepared by management and provided to SARS for inclusion in the State of Oregon CAFR are consistent, clear and understandable.

Significant Difficulties Encountered During the Audit

We encountered no significant difficulties in dealing with management in performing and completing our audit.

Corrected and Uncorrected Misstatements

Professional standards require us to accumulate all factual, projected, and judgmental misstatements identified during the audit, other than those that are trivial, and communicate them to the appropriate level of management. We did not identify any misstatements during our audit.

Disagreements with Management

For purposes of this letter, professional standards define a disagreement with management as a financial accounting, reporting, or auditing matter, whether or not resolved to our satisfaction, that could be significant to the financial statements or the auditor's report. We are pleased to report that no such disagreements arose during the course of our audit.

Other Findings or Issues

No other findings or issues came to our attention that are significant and relevant to those charged with governance regarding their responsibility to oversee the financial reporting process.

Management Representations

We have requested and received certain written representations from management that are included in the management representation letter dated December 30, 2013.

Management Consultation with Other Independent Auditors

In some cases, management may decide to consult with other accountants about auditing and accounting matters, similar to obtaining a "second opinion" on certain situations. To our knowledge, there were no such consultations with other accountants.

This communication is intended solely for the information and use of the Commissioners of the Oregon Liquor Control Commission and management of the Commission and is not intended to be and should not be used by anyone other than these specified parties.

OREGON AUDITS DIVISION
December 30, 2013

Oregon
John A. Kitzhaber, MD, Governor

Liquor Control Commission
9079 SE McLoughlin Blvd
Portland, OR 97222-7355
(503) 872-5000
(800) 452-6522

December 30, 2013

Gary Blackmer, Director
Secretary of State, Audits Division
255 Capitol Street N.E., Suite 500
Salem, Oregon 97310

Dear Mr. Blackmer:

This representation letter is provided in connection with your audit of the State of Oregon's financial statements as of and for the year ended June 30, 2013 and the related notes to the financial statements. The Oregon Liquor Control Commission (department) submits financial information to the Department of Administrative Services for the preparation of the State of Oregon's financial statements and related notes. The audit is being conducted for the purpose of expressing an opinion as to whether the financial statements present fairly, in all material respects, the financial position as of June 30 2013, the respective changes in financial position and cash flows for the year then ended in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Certain representations in this letter are described as being limited to matters that are material. Items are considered material, regardless of size, if they involve an omission or misstatement of accounting information that, in the light of surrounding circumstances, makes it probable that the judgment of a reasonable person relying on the information would be changed or influenced by the omission or misstatement.

We confirm, to the best of our knowledge and belief, having made such inquiries as we considered necessary for the purpose of appropriately informing ourselves, as of December 30, 2013:

1. We have fulfilled our responsibilities, as set out in the terms of the audit engagement dated September 24, 2013, for the preparation and fair presentation of the financial statements accordance with U.S. GAAP.

2. We acknowledge our responsibility for the design, implementation, and maintenance of internal control relevant to the preparation and fair representation of financial statements that are free from material misstatement, whether due to fraud or error.

3. We acknowledge our responsibility for the design, implementation, and maintenance of internal controls to prevent and detect fraud.

4. Significant assumptions we used in making accounting estimates, including those measured at fair value, are reasonable.

5. Related party relationships and transactions have been appropriately accounted for and disclosed in accordance with the requirements of U.S. GAAP.

6. No events have occurred subsequent to the balance sheet date and through the date of this letter that would require adjustment to or disclosure in the financial statements.

7. The effects of all known actual or possible litigation and claims, have been accounted for and disclosed in accordance with U.S. GAAP.

8. We have provided you with:

   (a) Access to all information, of which we are aware, that is relevant to the preparation and fair presentation of the financial statements, such as records, documentation, and other matters.

   (b) Additional information that you have requested from us for the purpose of the audit.

   (c) Unrestricted access to persons within the entity whom you determined it necessary to obtain evidence.

9. We have disclosed to you the results of our assessment of the risk that the financial statements may be materially misstated as a result of fraud.

10. We have no knowledge of any fraud or suspected fraud that affects the agency and involves:

    (a) Management;

    (b) Employees who have significant roles in internal control; or

    (c) Others when the fraud could have a material effect on the financial statements.

11. We have no knowledge of any allegations of fraud, or suspected fraud, affecting the agency's financial statements communicated by employees, former employees, analysts, regulators, or others.

12. We have no knowledge of any instances of noncompliance or suspected noncompliance laws, regulations, provisions of contracts and grant agreements whose effects should be considered when preparing financial statements.

13. We are not aware of any pending or threatened litigation and claims whose effects should be considered when preparing the financial statements.

14. We have disclosed to you the identity of the department's related parties and all related party relationships and transactions of which we are aware.

15. We are responsible for compliance with the laws, regulations, and provisions of contracts and grant agreements applicable to us; and we have identified and disclosed to you all laws, regulations and provisions of contracts and grant agreements that we believe have a direct and material effect on the determination of financial statement amounts, or other financial data significant to the audit objectives.

16. There are no violations or possible violations of laws and regulations, provisions of contracts and grant agreements, whose effects should be considered for disclosure in the financial statements, or as a basis for recording a loss contingency, or for reporting on noncompliance.

17. Provisions for uncollectible receivables have been properly identified and recorded.

18. Capital assets, including infrastructure and intangible assets, are properly capitalized, reported, and, if applicable, depreciated.

19. Capital assets have been evaluated for impairment as a result of significant and unexpected decline in service utility. Impairment loss and insurance recoveries have been properly recorded.

20. The department has satisfactory title to all owned assets, and there are no unrecorded liens or encumbrances on such assets nor has any asset been pledged as collateral.

21. The department has no plans or intentions that may materially affect the carrying value or classification of assets, liabilities, or equity.

Signature	Signature
Steven Marks, Executive Director	F. Michael O'Connor, Director - Fin. Services
Print Name and Title of Chief Executive Officer	Print Name and Title of Chief Financial Officer

Memorandum

January 16, 2015

To: Karynn Fish, OLCC

From: Sylvia Ciborowski, JLA Public Involvement

Re: OLCC Community Meeting Planning Survey Results

SURVEY RESULTS SUMMARY

1. Overview

OLCC created and administered a survey from January 6 to 13 to solicit input from community members about the new legislation regarding legalization of marijuana. The purpose of the survey was to obtain feedback on the major issues of interest to people, to help inform an agenda and structure for the upcoming Listening Meetings on the new legislation.

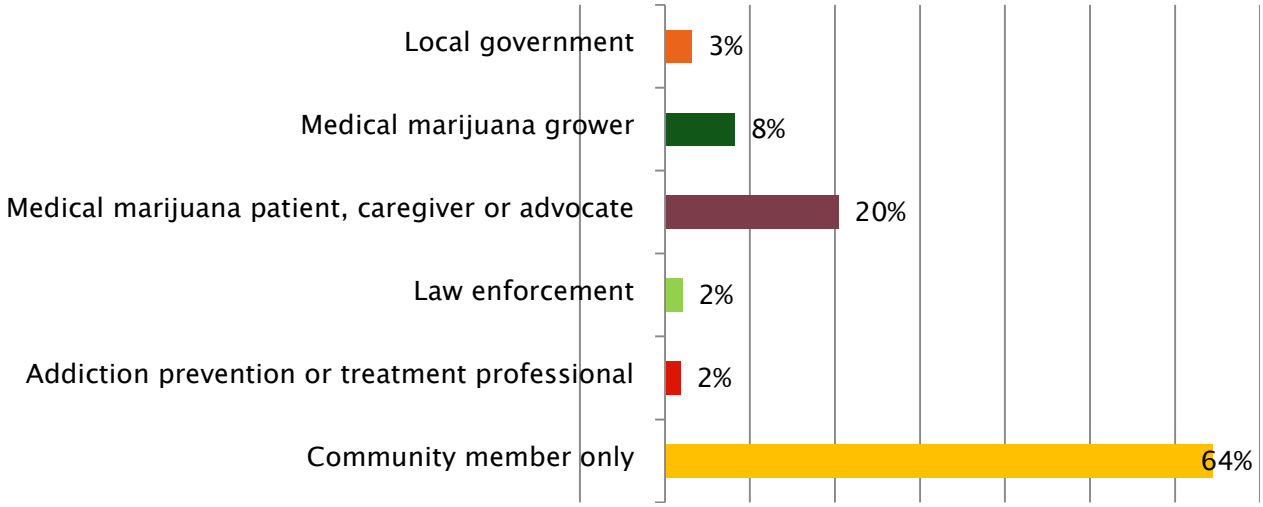
In total, 16,456 people completed the survey. This memorandum includes a summary of their responses.

Please note that this is not a scientific analysis. The summary was compiled using charts and Text Analysis tools available through Survey Monkey, as well as reading and categorizing a randomized sample of open-ended responses.

2. Affiliation of Participants

Participants were asked to indicate their affiliation. Most participants indicated that they are community members (64%). 20% said they are medical marijuana patients, caregivers or advocates, and 8% said they are medical marijuana growers. The chart below shows how respondents said they are affiliated:

Affiliation of Participants



3. Residence

The majority of respondents reside in one of the following counties:

- Portland Area – 49.5%
  - *Multnomah – 29.6%*
  - *Clackamas – 8.4%*
  - *Washington – 9.8%*
  - *Yamhill – 1.7%*
- Salem Area – 14.0%
  - *Marion – 7.5%*
  - *Polk – 2.1%*
  - *Linn – 2.5%*
  - *Benton – 1.9%*
- Eugene Area (Lane County) – 10.6%
- Bend Area (Deschutes County) – 6.8%
- Medford Area – 8.4%
  - *Jackson – 4.7%*
  - *Josephine – 2.2%*
  - *Douglas – 1.5%*
- Klamath – 1.1%
- Baker City Area –0.8%
  - Baker – 0.3%
  - Grant – 0.1%
  - Union – 0.4%
- Pendleton Area – 1.0%
  - Umatilla – 0.9%
  - Morrow – 0.1%
- Newport Area (Lincoln County) – 0.8%

4. Primary concerns and hopes about implementation of Oregon's recreational marijuana law

People were asked to provide their concerns and hopes about the new legislation. 77% of respondents answered this question. The main themes heard include:

- **Regulation and taxation** – Concern that the recreational marijuana program will be over-regulated or overtaxed. People want regulations and taxes to be fair and reasonable, to encourage legitimate marijuana operations/purchasing, and to diminish the black market. A main hope expressed by participants is that the new legislation will reduce the black market.

Some commented that the program should be regulated similarly to the alcohol program. Some expressed concern about environmental regulations for growing operations, and some commented that the licensing process should be streamlined, transparent, and fair.

- **Affordability** – People expressed that marijuana products should be affordable, and that the new legislation should not make medical marijuana more expensive.

- **Negative effect on children** – Many people expressed concern that the legislation will make marijuana more easily available to children, or that advertising/products will target children. Some expressed support for regulations and strict penalties on adults or establishments that serve minors.

- **Revenue generation** – People expressed support for the use of the marijuana program as a new source of revenue for the state. Many had comments about how revenue should be used (such as education, drug awareness/treatment programs, law enforcement, etc.). Many want to see revenue kept in state—and some noted a desire for promoting more small, local marijuana-related business rather than letting large out-of-state companies operate in Oregon. Some supported increased tourist revenue from the marijuana program.

- **Quality of life impacts** – Some were concerned about the impacts of smoking in public (second-hand smoke concerns and making marijuana more available to children). People want to know where mariuana businesses will be allowed to locate and operate, and are concerned about increased populations of drug users. Some expressed concern about establishments located in low-income areas and the potential disproportionate affect on underserved populations.

- **Lower incarceration rates and decriminalization** – A main hope expressed by people is that the new legislation will lead to lower incarceration rates for marijuana-related crimes.

- **Developing standards for DUII testing --** Many people were concerned about developing an appropriate DUII tests. There was also some concern about increased DUIIs and safety on the road.

- **Impact on medical marijuana program** – Some people expressed concern about the new legislation's impact on the medical marijuana program.

- **Education** – People want to see education programs put in place to teach about the negative effects of marijuana. There was particular support for drug awareness programs in schools. Some expressed hope that the program can increase awareness about marijuana's positive effects and help reduce the stigma against it.

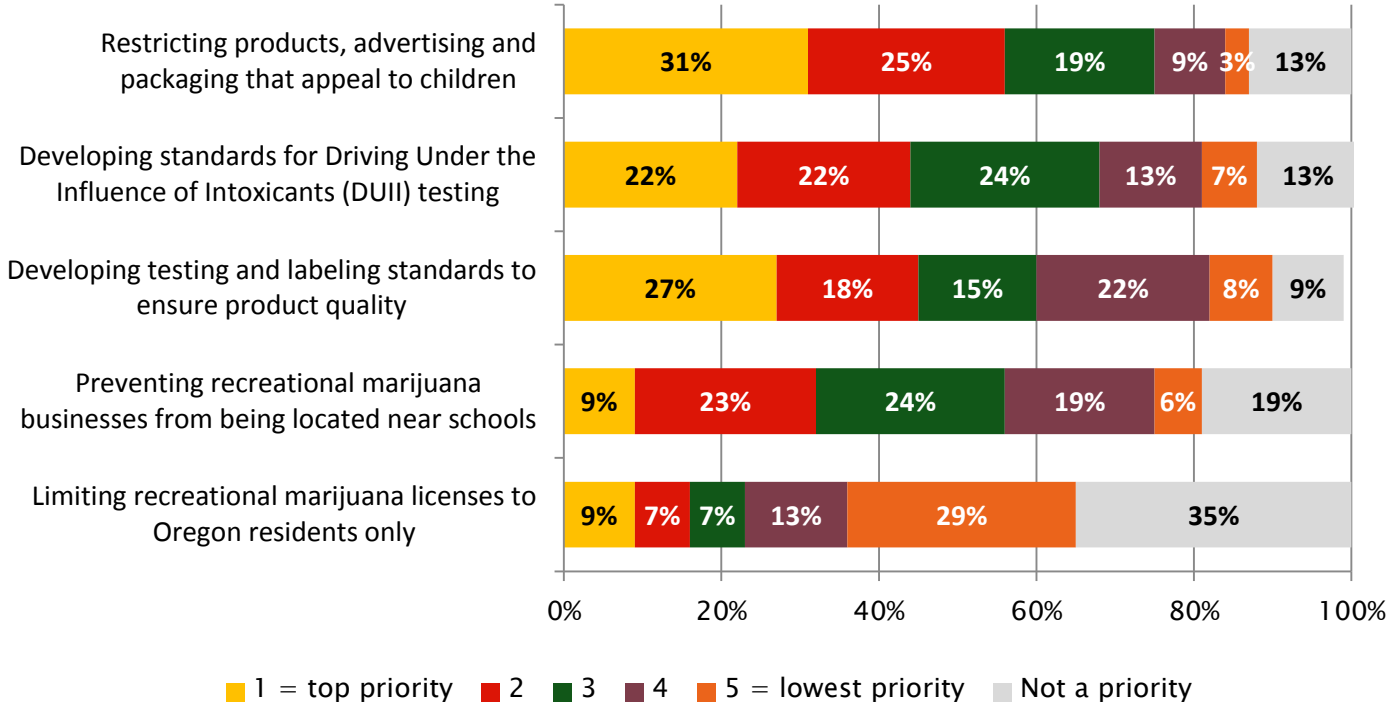
- **Enforcement difficulties** – Some people asked how marijuana laws and rules would be enforced and whether there may be a crime increase resulting from legalization.

- **Workplace discrimination** – Some expressed concern about discrimination against employees that smoke marijuana, and want to see development of fair marijuana testing.

5. Priority issues

The survey asked respondents to prioritize among five issue areas that the OLCC will address as it implements the marijuana law. 86% of respondents answered this question. The most highly ranked priorities are: 1) restricting products, advertising and packaging that appeal to children; and 2) developing standards for DUII testing. Lowest priority was given to limiting recreational marijuana licenses to Oregon residents only. The chart below shows how survey respondents prioritized the issue areas (with 1=highest priority, and 5=lowest priority)

Prioritization of Issue Areas



The following chart shows the average ranking that each issue area received.

Issue Area	Average ranking (on 1-5 scale)
Restrict products, advertising and packaging that appeal to children	3.84
Develop standards for DUII testing	3.44
Develop testing and labeling standards to ensure product quality	3.37
Preventing recreational marijuana businesses from being located near schools	3.14
Limiting recreational marijuana licenses to Oregon residents only	2.33

Additionally, there is some variation in how the different affiliation groups ranked the five issue areas:

- **Community member** *(12,060 participants)* – Prioritization by this group mirrors the general results.

- **Addiction prevention or treatment professional** *(305 participants)* – Prioritization by this group mirrors the general results.

- **Law enforcement** *(364 participants)* – Top priority for this group is setting DUII testing standards (3.93 ranking), followed by restrictions on appealing to children (3.86 ranking) and preventing location near schools (3.34 ranking). Developing product quality standards was a much lower priority for this affiliation than for the general results (2.58 ranking).

- **Medical marijuana patient, caregiver or advocate** *(3,145 participants)* – Developing product quality standards was the highest priority for this group (3.80 ranking), followed by restrictions on appealing to children (3.64 ranking). This group gave lower priority to developing DUII testing standards than the general results (3.03 ranking).

- **Medical marijuana grower** *(1,261 participants)* – Developing product quality standards was the highest priority for this group (3.67 ranking). This group gave second priority to limiting licenses to Oregon residents only (3.52 ranking) —much higher priority than the general results. This group gave lower priority to developing DUII testing standards than the general results (2.77 ranking).

- **Local government** *(508 participants)* – This group ranked restricting appeal to children as a very high top priority (4.12 ranking) and gave a high ranking to developing DUII testing standards (3.63 ranking). Developing product quality standards (2.82 ranking) and limiting licenses to Oregon residents (1.88 ranking) were very low on their priority list.

6. Other Priority Areas

Respondents were asked whether any issue areas are missing that need to be addressed. 34% of respondents answered this question. A review of responses shows that the following issue areas are important to community members and should likely be addressed at the Listening Meetings *(listed in approximate order of priority)*:

- **Pricing, Taxation and Affordability** – Many people want to make sure that marijuana is priced affordably and easily accessible. This means low taxes on marijuana and no unduly burdensome regulations to encourage legitimate marijuana operations. They want to make sure prices are competitive in order to depress the black market.

- **Education, awareness and treatment** – People want to see more education on marijuana, both about its benefits and dangers, and particularly education for kids and teens. They also want to see funding of drug treatment centers to combat addiction.

- **Medical marijuana** – Many people expressed concern about how the recreational marijuana program will impact the medical marijuana program. Many said they want to see the medical marijuana program remain as-is, without additional costs or access issues for patients. Some expressed hope that the recreational marijuana program would increase affordability and access for patients, as well as further research and development. There is concern that the price of recreational marijuana will drive up the price of medical marijuana. A major issue is whether the medical and recreational programs will be separated or merged, with supporters on both sides.

- **Employment drug testing concerns** – An important issue is how the new law will affect drug testing at the work place. People expressed that it will be important to develop accurate tests to determine if someone is intoxicated at work, not just show prior consumption. There is some desire to allow continued drug testing at work, although some support prohibiting any kind of drug testing. There is concern about testing of medical marijuana users and workplace discrimination against marijuana users.

- **Public consumption and location of establishments** – A major issue is whether marijuana will be able to be consumed in public or not (with supporters on both sides). Some support legally prohibiting being under the influence of marijuana in public. People want to discuss whether social establishments like coffee shops or bars will be able to serve marijuana.

- **Accessibility by minors** – People are concerned about accessibility of marijuana to minors. Many support harsh penalties for adults or establishments that serve minors. There is also concern about parents smoking in front of children.

- **Allocation of tax revenue** – Many people want to know how tax revenue from the marijuana program will be used. Many support allocation of tax revenue to fund schools, drug treatment/awareness programs, and better law enforcement.

- **Enforcement issues** – Some people had concerns about how laws will be enforced and who will enforce them. Many support strict enforcement of laws and more funding to law enforcement, whereas some have concerns about abuse of power by law enforcement.

Priority word charts – The charts below show the main words used in people's responses to this question, using Survey Monkey Text Analysis. The larger the word, the more often it was used. The most commonly used words were: tax, price, medical, public, law, business, regulations, education, growers, and black market.

First priority – top words used

Second priority – top words used

Third priority – top words used

7. Conclusion

Survey respondents provided a wide range of concerns and comments about the recreational marijuana program. Some of these concerns fall under OLCC's authority, and others will need to be addressed by a different process or agency.

Overall, survey respondents are most concerned about a few key issue areas that do fall under OLCC's authority, including: 1) preventing marijuana sales to minors, 2) development of fair DUII standards, 3) avoiding burdensome regulations or taxation on recreational marijuana, 4) promoting drug education, awareness and treatment programs, 5) keeping the price of marijuana affordable, and 6) using tax revenue to support valuable state programs such as education, drug awareness programs and law enforcement.

Some specific interest groups vary in the issue areas that are most important to them. For medical marijuana growers, patients, caregivers, and advocates—developing product quality standards is a very high priority. Medical marijuana growers are the only group that said it is important to limit recreational marijuana licenses to Oregon residents only.

There are a number of issue areas that will be important to address, but which are not under OLCC's authority. These include: 1) the effect of the recreational marijuana program on medical marijuana and the potential increase in the price of medical marijuana, 2) regulations around employee drug testing, and 3) enforcement of recreational marijuana laws.