

Vermont DLC Warehouse Analysis & Layout



September 29, 2015

Chet Willey

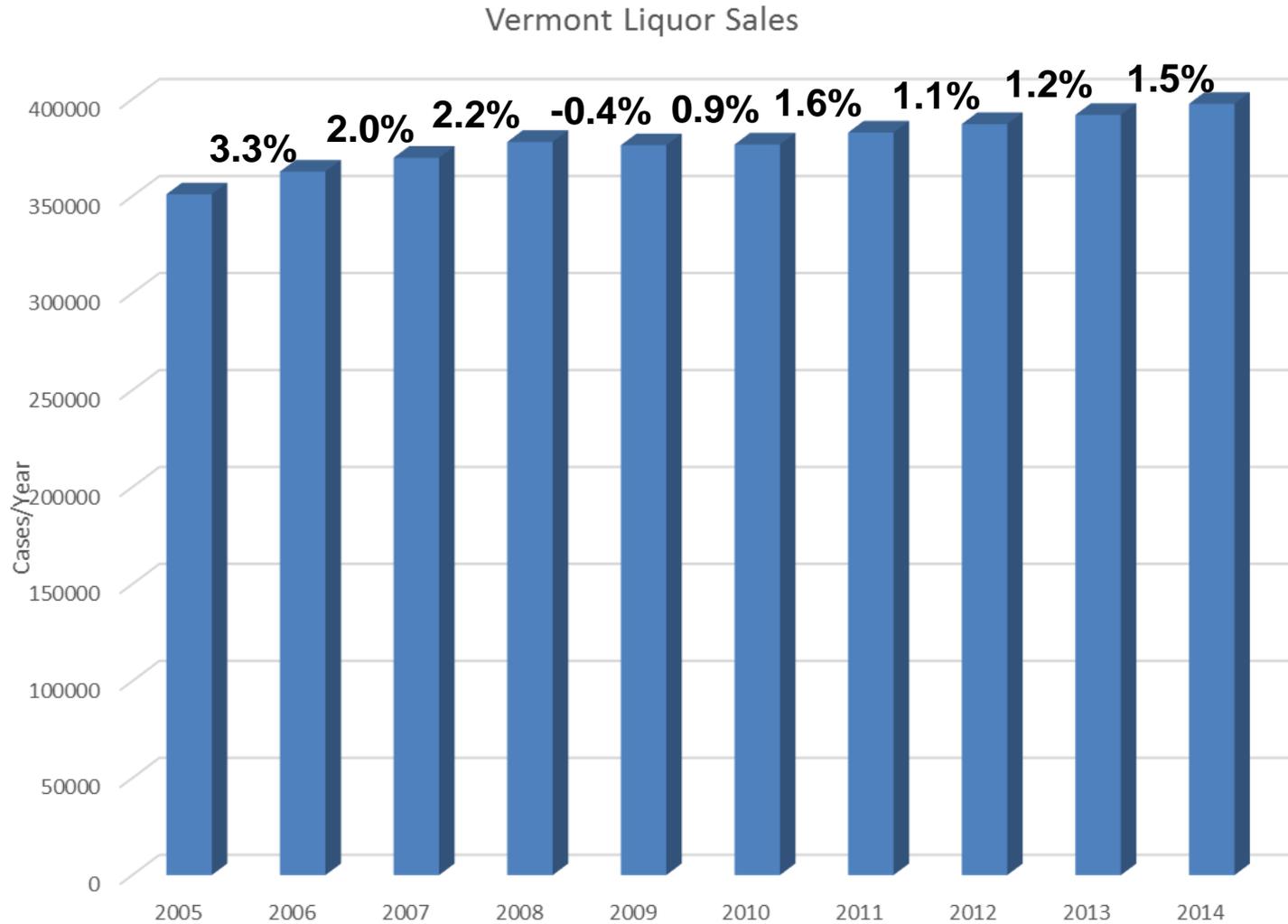
Chet Willey Associates

- **Sales/SKU/Inventory Growth Trends**
- **Current Layout**
- **Alternative Layouts and Cost**
- **Capacity Analysis**
- **Delivery Alternatives**
- **Security Observations**
- **Safety Observations**
- **Over, Short & Damage**
- **Conclusions**
- **Recommendations**

Growth Trends



Sales Growth @ 5,200 CS/YR - 1.2%

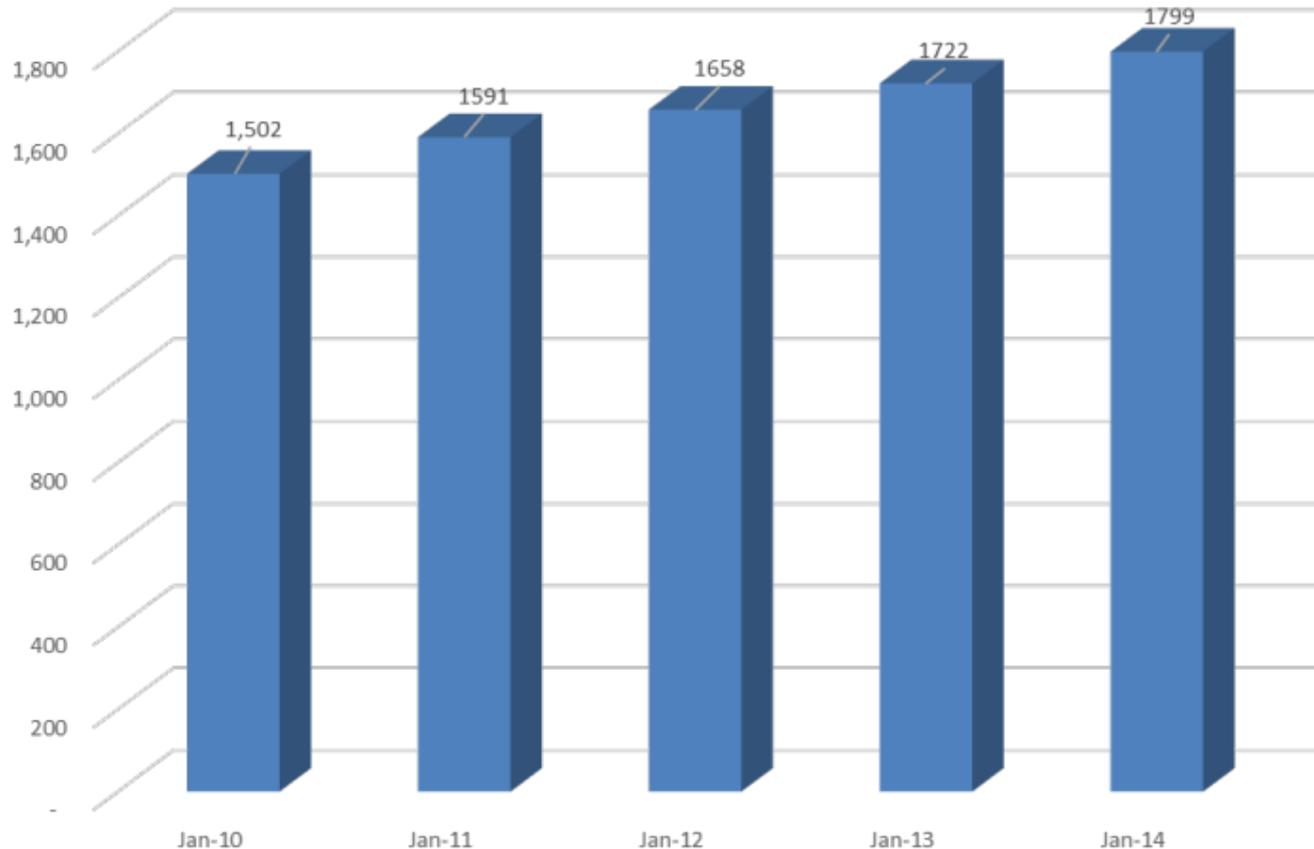


Sales increases are steady with no large increase forecast for the future.



SKU Growth – Avg 74/year - 4.4%

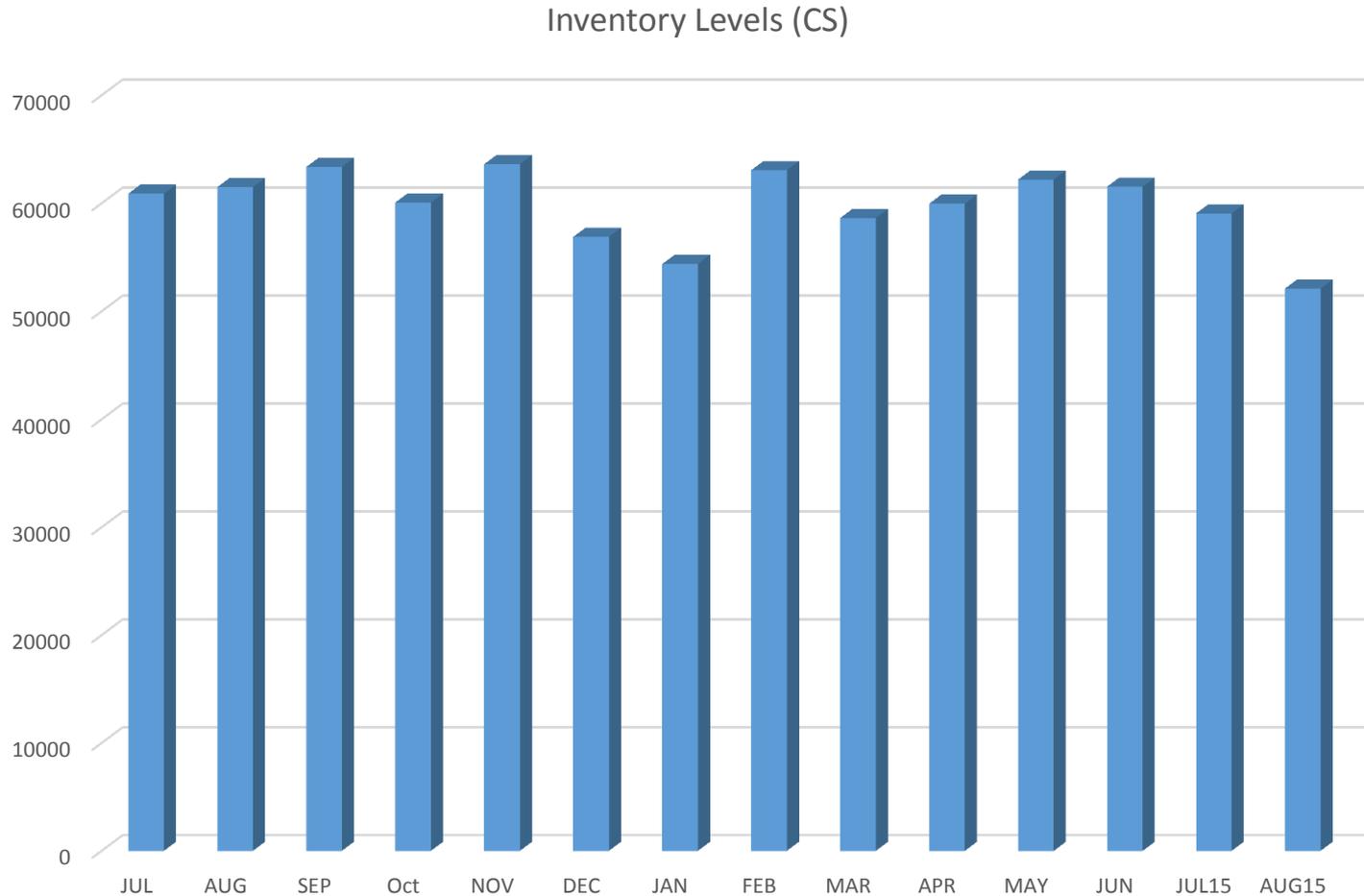
SKU's Growth by Year



SKU growth is the main reason a new warehouse will be required.



Inventory Trends



Recent efforts to eliminate overstocks and delisted inventory has substantially reduced inventory levels. This has improved safety by eliminating pallets being stored aisles.



August 2015 Inventory Summary

#	Status	# of Codes	OOS	In Stock	% in Stock	CS Inven	<1 CS	1-3 CS	3-5 CS	5-10 CS	10-15 CS	15-20cs	20-1P	1-3P	3-5P	5-10P	>10P
1	Normal Stock Items	852	21	831	97.5%	47657.1	5	17	35	78	105	71	364	136	22	14	5
2	New Code	95	10	85	89.5%	2069.6	4	6	4	10	11	11	34	4	1		
7	Limited	34	12	22	64.7%	249.2	6	1	4	6			5	0			
6	Special Order	1321	642	679	51.4%	2187.4	266	273	61	42	17	6	11	3			
5	Delisted	287	269	18	6.3%	263.8	3	1	1		6	1	6				
4	Delisted - Cannot Buy	128	120	8	6.3%	64.0	2	2		1	1	1	1				
3	Delisted - Cannot Ship	69	64	5	7.2%	6.5	3	2									
9	Unavail - Do Not Order	285	280	5	1.8%	17.4	3	1			1						
8	Inactive	15	15	0	0.0%	0.0											
TOTAL		3086	1433	1653	53.6%	52515.0	292	303	105	137	141	90	421	143	23	14	5

16% of the in stock items are special orders that have an inventory less than 1 case. In August, 75% of the Codes had bottle picks. Out of stocks are high on new and limited codes. Normal stock items make up 91% of inventory but only 28% of codes.

Current Layout

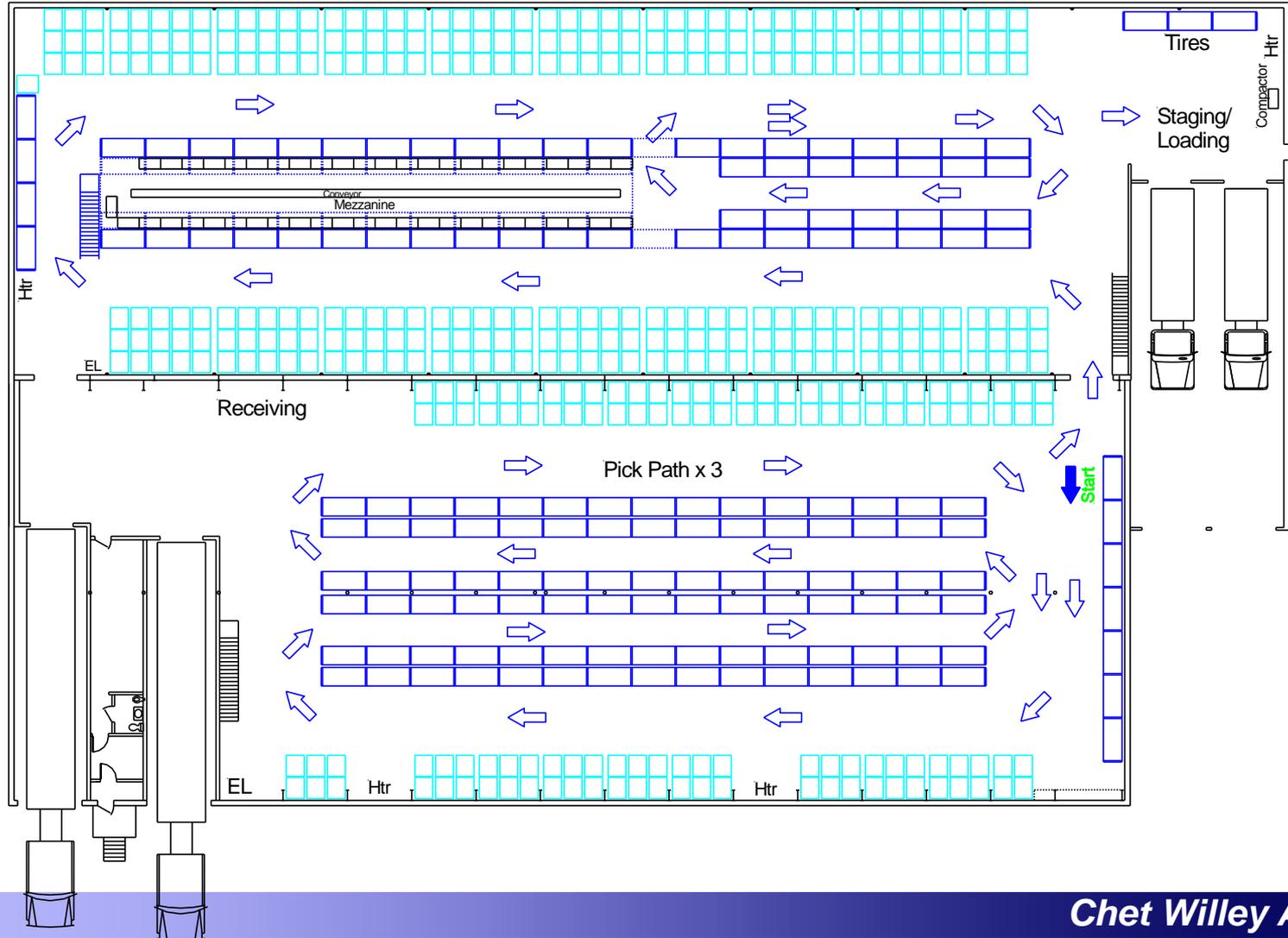


Current Warehouse Operation

- The current warehouse is designed as a narrow aisle pick operation with all 3-5 levels of racks and floor stock serving as pick locations.
- Due to tall pallets of product being picked and the uneven floor, the top level of the racks are picked first, followed by the second level and finally the floor level. This results in three trips through the pick path in the old warehouse. All levels of the racks in the new addition which contain lower volume items are picked along the pick path.
- The lowest volume bottle picks are located on a mezzanine and are added at the end of the picking operation.
- All product is received at docks near the main entrance and staging and shipping is at the opposite end near the completion of the pick path.

Current Warehouse Layout

Vermont Liquor Warehouse
30,000 SF



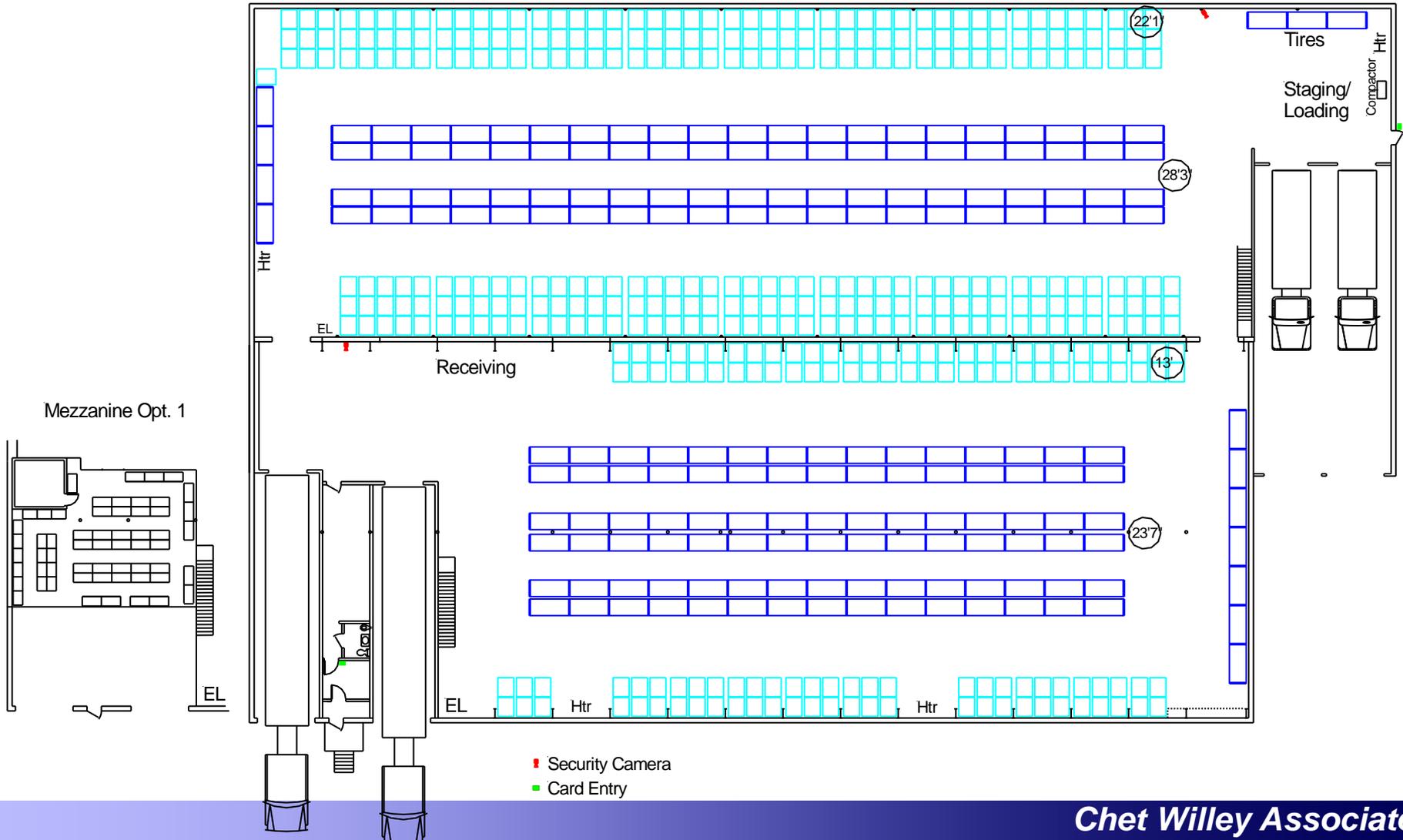
Layout Option 1

Layout Option 1

- The following changes are recommended to increase the number available SKU pick faces.
 - Replace 32 - 3"x1.5"x14' undersized uprights in old addition with 3"x3"x16' uprights from the center row.
 - Purchase and install 32 – 3"x3"x18' uprights in the center row to increase pallet storage from 3 to 4 high gaining 60 pallet positions. Approximate cost = \$10,000 plus installation and cost to move product. Includes new beams and wire decking.
 - Move mezzanine pick area to office area over warehouse entrance to increase pallet storage by 296 pallet positions and bottle pick slots from 960 to 1,075 for an increase of 115 slots. Eliminates 2 serious safety concerns highlighted in the recent safety audit.
 - Remove 24 – 36" racks that support the mezzanine and replace with 28 - 42" racks with 42" wire deck and 8' beams. Estimated cost = \$20,000.
 - Both changes increase rack positions by 356 or 31%.

Layout Option 1

Vermont Liquor Warehouse Layout Option #1



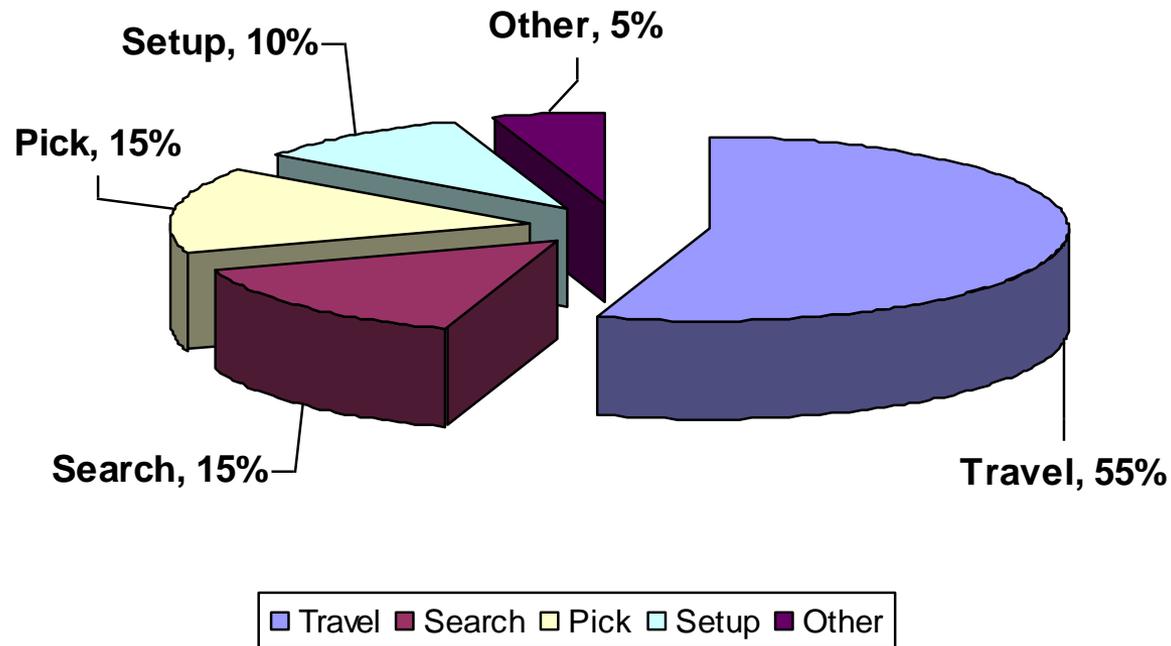
Layout Option 2

Layout Option 2

- Option 2 is designed to allow picking from the floor level and converting from order pickers to 2 pallet walkie riders.
- This significantly reduces travel distance as well as the total number of times through the pick path.
- Case flow track would be utilized for all products that sold less than 24 cases per month.
 - 17-24 Cases/month: 3 - 8' case flow @ 8 cases = 24 case capacity
 - 9-16 cases/month: 2- 8' case flow @ 8 cases = 16 case capacity
 - 4-8 cases/month: 1- 8' case flow @ 8 cases = 8 case capacity
 - 1-3 cases/month: 1 – 42" case flow @ 3 cases = 3 case capacity
- Since case flow would hold one month in average sales, they would be replenished once per month.
- Bottles and full cases would both be picked from the same case flow. Products with more than one lane of case flow could pick bottles from one lane and cases from another.
- Involves replacing part of the unused overhead conveyor with racks.

Pick Time Elements

Typical Order Picking Time Distribution



- Travel time takes up 55% of total pick time.
- Actual product picking accounts for only 15%.

Walkie Rider



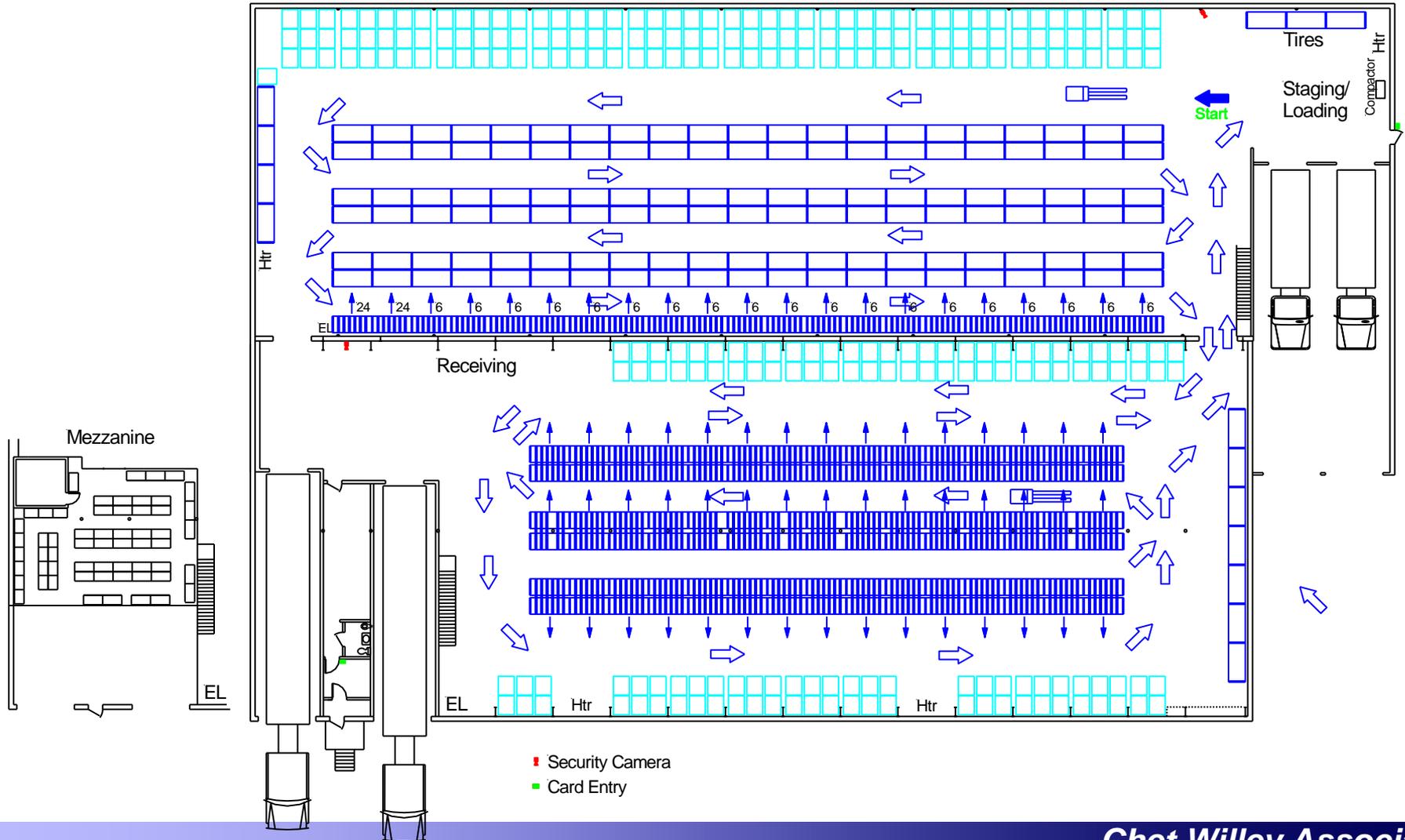
96" walkie riders would allow picking 2 pallets at a time or support a future conversion to cart delivery.



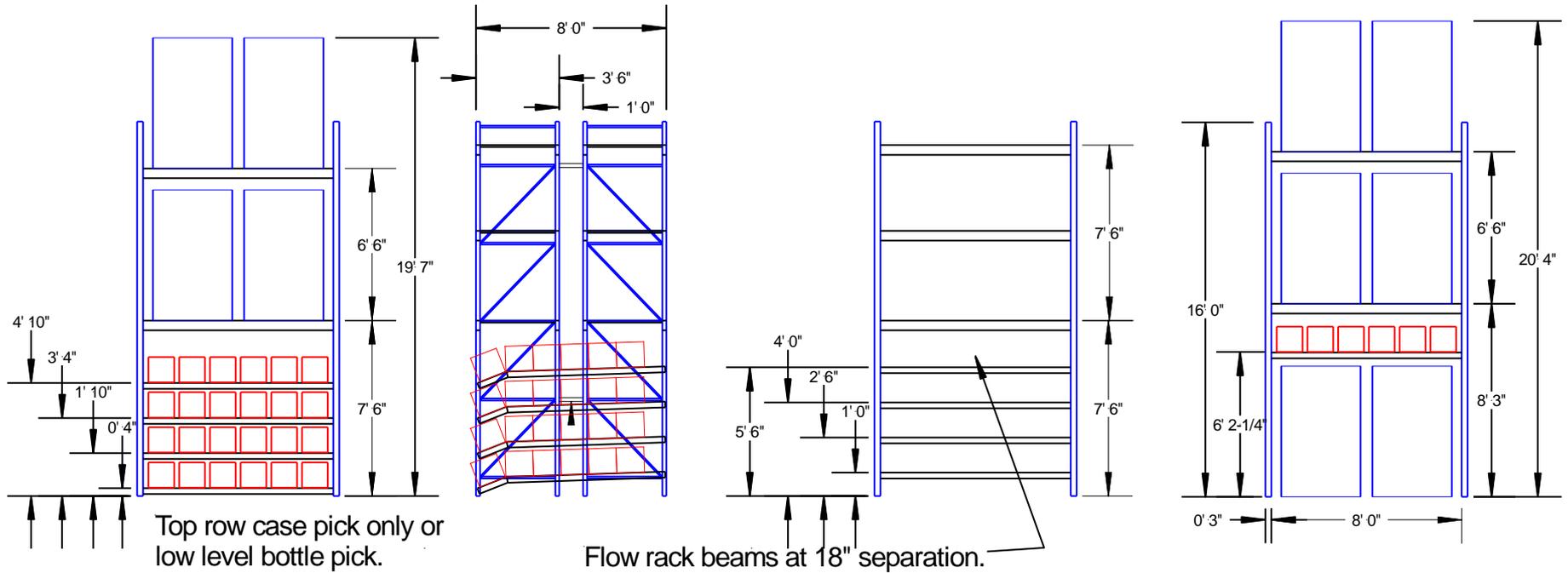
Layout Option 2

Vermont Liquor Warehouse

Layout Option #2



Case Flow Configuration





Productivity Differences

- Picking from the floor level would reduce travel distance.
- Moving from order pickers to 2 pallet walkie riders would eliminate trips through the pick area and allow a future transition to cart delivery.
- An average of 200 cases would have to be replenished per day in case flow.
- Partial cases would have to moved to pick full cases in case flow.

Description	Current/Opt1	Option 2
Trips thru pick path Jun thru Aug	2,437	1,477
Pick path travel distance	2,580	1,535
Total feet traveled	6,287,460	2,267,195
Avg feet traveled per month	2,095,820	755,732
Ft/Mile	5,280	5,280
Total Miles Traveled	397	143
Travel speed in MPH	1	2
Hours of travel time	397	72
Hours saved/mo with new pick path & walkies		325
Hours saved per year		3,904
Total savings @ \$20/hour with benefits		\$ 78,089
 Avg Case Flow Replenishment @ 200 CS/Day @ 2 hrs/day = 400 hrs/year @ \$20/hr =		 \$ 8,000

Fewer trips in Option 2 by picking 2 pallets at a time.

Capacity Analysis



Capacity Comparisons

Option	Rows			Racks			Shelves			CaseFlow			Total		
	# of Rows	CS Cap	50%	# of Racks	CS Cap	50%	# of Shlvs	CS Cap	50%	# of CF	CS Cap	75%	Facings	CS Max Cap	CS Wrk Cap
Current Layout	150	54,270	27,135	157	53,636	26,818	48	960	480				2,174	108,866	54,433
Option 1	150	54,270	27,135	185	64,736	32,368	58	1,075	538				2,644	120,081	60,041
Option 2	106	33,634	16,817	248	59,992	29,996	58	1,075	538	1,250	9,190	6,893	2,230	103,891	47,351
August Inventory			28,955			22,740			627				1,640		52,514

August inventory shows current warehouse is nearing capacity.

Most of the extra facings available are out-of-stocks and low volume bottle picks.

Option 2 would improve productivity but would not have enough working capacity.

Option 1 based on capacity and increased code facings is the best choice to prolong the life of the facility for approximately 5 years.



Capacity Analysis

	Rack Pick		CaseFlow		Shelf	
	Rows	Positions	Positions	Sub Total	Pick	Total
Current	150	1167		1317	960	2277
Option 1	150	1522		1672	1075	2747
Option 2	106	408	726	1240	1075	2315
Option 1 Diff	0	355		355	115	470
Option 2 Diff	-44	-759	726	-77	115	38
SKU Inc/Yr				74		
Years Added w/ Option 1				4.8		
Years Added w/ Option 2				-1.0		

- Option 1 is the only one that increases SKU capacity and extends the life of the facility.
- Shelf pick increase is for bottle picks less than 2 cases per month which does not significantly increase capacity.



Project Cost Analysis

Item	Option 1	Option 2
Additional select rack	\$30,000	\$40,000
Case flow track		\$100,000
Walkie Riders (4)		\$60,000
Total	\$30,000	\$200,000

Net productivity savings

(\$70,000)

Option 1 delays building a new warehouse.

Option 2 would cost justify in 3 years

Security changes have not been estimated and no savings have been identified.

- Option 1 would provide additional warehouse capacity delaying a new warehouse by 4-5 years.
- Option 2 would improve productivity but would decrease overall capacity.



Space Requirements Current Warehouse

Space requirements shown below are calculated based on using the same narrow aisle pick system. This supports the layout analysis that the warehouse should be sufficient for the next 4-5 years.

Space requirements are for product storage and aisles and does not include staging, dock space or other functions.

Summary for Vermont DLC 10 Year Growth Projection

		Row Depth & Number of Rows					SKU's	CS SOLD	CS INV	PAL INV	ACT SF	REQ SF	Annual Growth Factor									
		1	2	4	8	Total							1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	
Other	Row Depth	1	2	4	8	1800	2348	45,623	60,340	2,305	28,100	25,767	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
	Required Rows	1683	89	28	0	1800	1795															
	Layout Rows					0																
Total	Required Rows	1683	89	28	0	1800	2,348	45,623	60,340	2,305	28,100	25,767	26,076	26,389	26,705	27,026	27,350	27,678	28,010	28,347	28,687	29,031
	Layout Rows	0	0	0	0	0	1795															

SKU GROWTH IMPACT CTW SPACE

	74	74	74	74	74	74	74	74	74	
Add'l SKU's by Year	74	74	74	74	74	74	74	74	74	
SQFT Required@ 6	444	888	1,332	1,776	2,220	2,664	3,108	3,552	3,996	4,440
Total CTW Space	26,520	27,277	28,037	28,802	29,570	30,342	31,118	31,899	32,683	33,471



Space Requirements – New Warehouse

Space requirements shown below are calculated based on using a more efficient pick system with 12 foot aisles. Since the warehouse would not be completed until 2020 or 2021 at the earliest, the facility size should be a minimum of 60,000 SF to accommodate 10 years of growth. This does not include space for DLC offices.

Building should be designed for easy expansion and the land acreage should be sufficient for 20-30 years of expansion.

Summary for Vermont DLC Opt 2 - Floor Level Picking

						Annual Growth Factor							1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%	1.2%		
Row Depth & Number of Rows						SKU's	CS SOLD	CS INV	PAL INV	ACT SF	REQ SF	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	
Liquor	Row Depth	1	2	4	8	Total	2348	45,623	60,340	2,305	28,100	29,998	30,358	30,722	31,090	31,464	31,841	32,223	32,610	33,001	33,397	33,798
	Required Rows	1749	23	28	0	1800	1795															
	Layout Rows					0																
Total	Required Rows	1749	23	28	0	1800	2,348	45,623	60,340	2,305	28,100	29,998	30,358	30,722	31,090	31,464	31,841	32,223	32,610	33,001	33,397	33,798
	Layout Rows	0	0	0	0	0	1795															

SKU GROWTH IMPACT CTW SPACE

Add'l SKU's by Year	74	74	74	74	74	74	74	74	74	
SQFT Required@ 13.4	992	1,983	2,975	3,966	4,958	5,950	6,941	7,933	8,924	9,916
Total CTW Space	31,349	32,705	34,065	35,430	36,799	38,173	39,551	40,934	42,322	43,714

Delivery Analysis



Delivery Operations

- Deliveries are normally made 4 days per week with the 5th day used for truck maintenance, work in the warehouse, etc.
- Pallets are brought into the truck and the cases are hand stacked on the floor with the exception of 6 accounts that will take pallet deliveries.
- Hand stacking is time consuming in loading and delivery.
- Cart delivery could be a cost saving option but would require lift gates to be installed on trucks and a safe method to load them with order pick equipment.

Cart Delivery System

- Perfect for accounts with 25-200 case orders.
- Eliminates blocking aisles during delivery.
- Quick check-in with no floor damage.
- Utilizes low cost end loaders with lift gate.
- 36' trailer holds 35 carts holding 25 cases/cart.
- Carts cost \$400 plus \$100 curtain to hold/protect product.
- Add \$15 modification to use with walkie riders.



25-50 Cases per Cart



Documented Benefits

- Reduces delivery time 30-50% per route.
- Reduces physical work by delivery personnel.
- Decreases driver turnover.
- Reduces workman's compensation claims.
- Reduces delivery trucks by 33-50% if truck capacity is available.
- Cost savings are approximately \$65,000 to \$80,000 per delivery truck and driver eliminated.

Cart Picking & Loading

Using Walkie Rider for Case Picking



Layering Cases for Stability



Cart Cover for Stability & Protection



Logistics Bar or Strapping



E-Track
Installed

Cart Unloading from Trailer

Nested Empties Leaves Space for Full Carts



Secure Trailer & Lower Platform



Release Lip on Lift Gate



Carts Move Over Rough Terrain



Cart Store Delivery

One Person Delivery thru Front Door



Cart Check-In within 3 Minutes



Cart Pivots into Store Cooler



Cart Unloaded in Tight Space



Cart Delivery

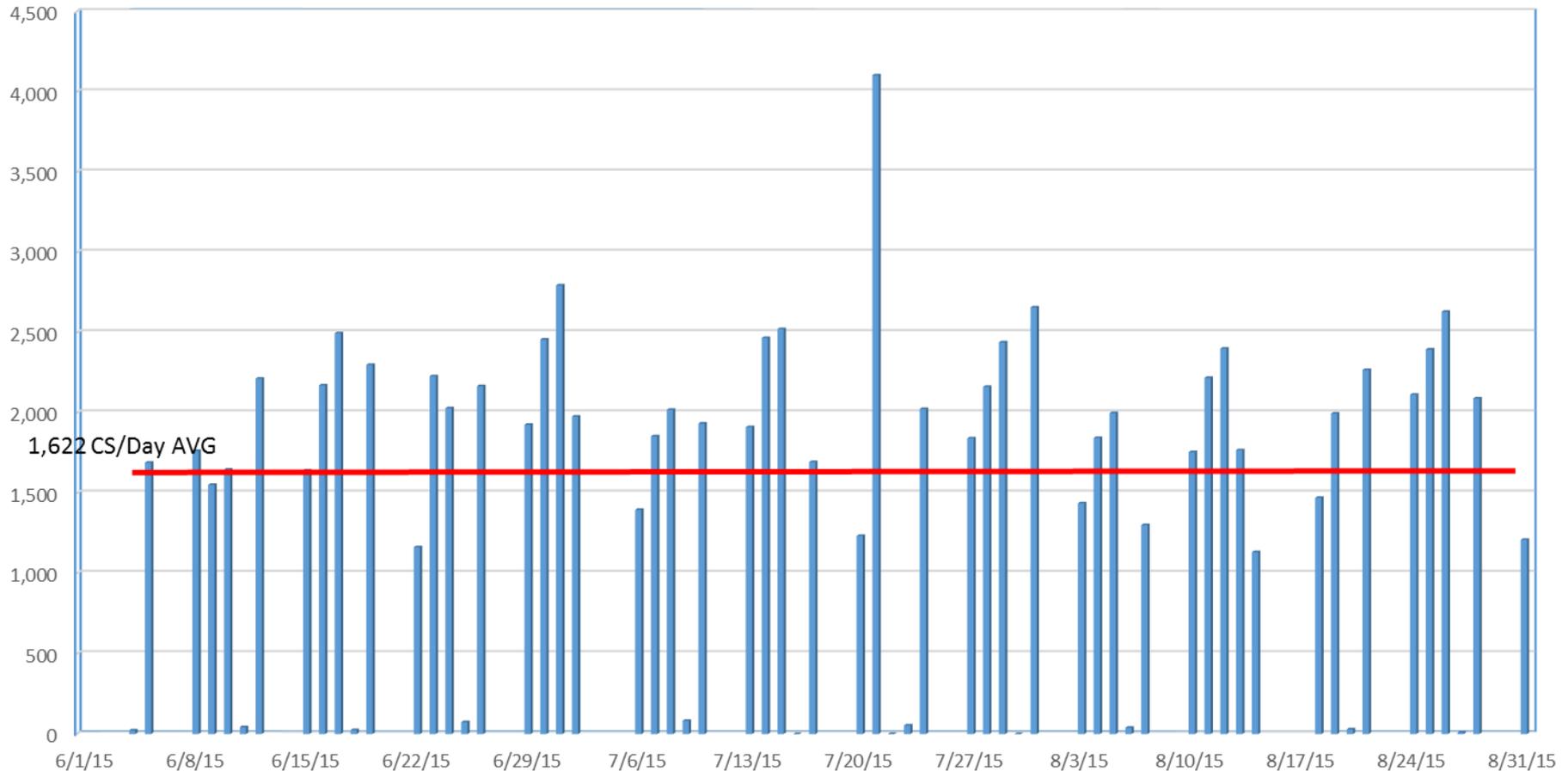
- Agents were canvassed regarding ability to take cart delivery:
 - 53 stated they could handle carts (6 currently take pallets)
 - 26 said they couldn't
- Carts could be used to load recycled bottles as long as there was sufficient room to maneuver the carts in the trailer.
- Carts are normally handled with a walkie rider or manually during picking. A safe method to handle them on an order picker would be required before they could be used. Magliner is evaluating.
- Additional study is required before this concept could be implemented including validating the savings and calculating the ROI.





Level Deliveries by Day (Picking)

Daily Deliveries - Jun thru Aug 2015



If deliveries were increased to 5 days, daily picking could be leveled improving productivity and possibly requiring less trucks. This option would need further study in conjunction with a minimum delivery quantity requirement.



Average Cases per Delivery

Agent	Agent Name	Deliveries	Tot Btl	Tot CS	CS/Del	Miles	Agent	Agent Name	Deliveries	Tot Btl	Tot CS	CS/Del
2045	A45 SHARON LIQUOR AGENCY	13	4247	306.88	23.6	42	2044	A44 Fairfax LIQUOR AGENCY	6	7167	643.42	107.2
2037	A37 WINDSOR LIQUOR AGENCY	13	4770	444.43	34.2	67	2062	A62 Essex Junction LIQUOR AGENCY	13	19115	1,396.35	107.4
2057	A57 PROCTORSVILLE LIQUOR AGENCY	13	4313	460.83	35.4	88	2018	A18 COLCHESTER LIQUOR AGENCY	16	19437	1,726.91	107.9
2013	A13 NORWICH LIQUOR AGENCY	13	4736	468.42	36.0	60	2019	A19 Orleans LIQUOR AGENCY	7	7828	756.83	108.1
2064	A64 Danville LIQUOR AGENCY	12	2344	252.36	21.0	29	2021	A21 Waterbury LIQUOR AGENCY	12	16001	1,322.05	110.2
2056	A56 WALLINGFORD LIQUOR AGENCY	12	3633	304.46	25.4	77	2069	A69 ST. ALBANS TOWN LIQUOR AGENCY	13	17771	1,473.57	113.4
2009	A9 ARLINGTON LIQUOR AGENCY	12	6531	580.73	48.4	112	2038	A38 Bristol LIQUOR AGENCY	7	10138	825.00	117.9
2054	A54 CHELSEA LIQUOR AGENCY	7	3241	173.28	24.8		2023	A23 Enosburg Falls LIQUOR AGENCY	7	8830	831.97	118.9
2012	A12 Richford LIQUOR AGENCY	7	3561	263.22	37.6		2078	A78 HINESBURG LIQUOR AGENCY	8	9592	956.30	119.5
2052	A52 HARMONYVILLE LIQUOR AGENCY	7	3278	268.42	38.3		2025	A25 South Hero LIQUOR AGENCY	12	14402	1,446.77	120.6
2003	A3 Island Pond	7	3452	287.62	41.1		2070	A70 Newport LIQUOR AGENCY	12	15345	1,453.79	121.1
2076	A76 Bondville LIQUOR AGENCY	7	3496	325.92	46.6		2047	A47 FAIR HAVEN LIQUOR AGENCY	13	16575	1,576.42	121.3
2079	A79 White River Junction LIQUOR AGENCY	7	4270	332.42	47.5		2060	A60 TAFT CORNERS LIQUOR AGENCY	16	22096	1,946.84	121.7
2001	A1 East Poultney	6	1480	163.83	27.3		2033	A33 Bradford LIQUOR AGENCY	6	8027	737.23	122.9
2029	A29 Rochester LIQUOR AGENCY	6	2840	243.83	40.6		2074	A74 RUTLAND TOWN LIQUOR AGENCY	18	23677	2,237.38	124.3
2011	A11 Canaan LIQUOR AGENCY	3	454	33.63	11.2		2051	A51 NORTH AVE LIQUOR AGENCY	13	18782	1,629.52	125.3
2034	A34 Stamford LIQUOR AGENCY	6	3408	313.92	52.3		2058	A58 WEST RUTLAND LIQUOR AGENCY	7	9976	914.30	130.6
2027	A27 Richmond LIQUOR AGENCY	15	8386	803.92	53.6		2024	A24 Lyndonville LIQUOR AGENCY	12	18442	1,591.66	132.6
2043	A43 North Troy LIQUOR AGENCY	6	3542	323.83	54.0		2067	A67 MONTPELIER LIQUOR AGENCY	14	19662	1,890.70	135.1
2016	A16 Bethel LIQUOR AGENCY	9	7188	533.78	59.3		2046	A46 Battery Street LIQUOR AGENCY	17	26885	2,375.77	139.8
2020	A20 NORTHFIELD LIQUOR AGENCY	13	10843	778.38	59.9		2041	A41 West Dover LIQUOR AGENCY	6	12326	912.82	152.1
2066	A66 BRATTLEBORO LIQUOR AGENCY	7	5960	445.17	63.6		2032	A32 Brandon LIQUOR AGENCY	8	13487	1,238.30	154.8
2030	A30 Montgomery Center LIQUOR AGENCY	6	4292	389.92	65.0		2053	A53 Essex Center LIQUOR AGENCY	12	24239	1,962.66	163.6
2002	A2 Poultney	6	4494	411.85	68.6		2014	A14 MORRISVILLE LIQUOR AGENCY	12	22764	1,996.52	166.4
2006	A6 RANDOLPH LIQUOR AGENCY	13	12547	934.77	71.9		2035	A35 Vergennes LIQUOR AGENCY	7	11519	1,175.73	168.0
2007	A7 Hardwick LIQUOR AGENCY	12	9072	878.43	73.2		2036	A36 SHELBURNE RD. LIQUOR AGENCY	14	29580	2,367.23	169.1
2028	A28 SPRINGFIELD LIQUOR AGENCY	14	12649	1,115.86	79.7		2061	A61 Pearl Street LIQUOR AGENCY	13	25041	2,216.49	170.5
2040	A40 BELLOWS FALLS LIQUOR AGENCY	8	9891	642.12	80.3		2010	A10 Jeffersonville LIQUOR AGENCY	6	11438	1,025.62	170.9
2077	A77 Chester LIQUOR AGENCY	7	7832	562.50	80.4		2081	A81 JOHNSON LIQUOR AGENCY	6	11141	1,031.80	172.0
2026	A26 Killington LIQUOR AGENCY	13	12083	1,060.78	81.6		2073	A73 WILLISTON ROAD LIQUOR AGENCY	18	36451	3,246.15	180.3
2042	A42 Derby Center LIQUOR AGENCY	11	9140	922.41	83.9		2068	A68 LAKE STREET LIQUOR AGENCY	13	25159	2,383.20	183.3
2050	A50 WOODSTOCK LIQUOR AGENCY	14	12757	1,178.37	84.2		2017	A17 Waitsfield LIQUOR AGENCY	7	13427	1,297.45	185.4
2008	A8 ALBURGH LIQUOR AGENCY	9	6918	762.77	84.8		2059	A59 Middlebury LIQUOR AGENCY	12	24271	2,435.99	203.0
2049	A49 St. Johnsbury LIQUOR AGENCY	12	11671	1,065.50	88.8		2039	A39 Shelburne LIQUOR AGENCY	12	27695	2,572.36	214.4
2015	A15 Wilmington LIQUOR AGENCY	8	7986	752.99	94.1		2063	A63 Stowe LIQUOR AGENCY	10	24153	2,201.23	220.1
2005	A5 LONDONDERRY LIQUOR AGENCY	7	8149	667.02	95.3		2072	A72 Rutland City LIQUOR AGENCY	13	31350	2,933.28	225.6
2048	A48 Pownal LIQUOR AGENCY	11	13552	1,067.73	97.1		2071	A71 MANCHESTER LIQUOR AGENCY	12	29142	2,867.94	239.0
2022	A22 SWANTON LIQUOR AGENCY	13	14133	1,270.35	97.7		2004	A4 WINOOSKI LIQUOR AGENCY	16	48095	4,409.21	275.6
2055	A55 W. BRATTLEBORO LIQUOR AGENCY	15	19427	1,512.96	100.9		2065	A65 BENNINGTON LIQUOR AGENCY	12	32450	3,318.66	276.6
2031	A31 MILTON LIQUOR AGENCY	15	16660	1,534.43	102.3		2075	A75 BARRE LIQUOR AGENCY	13	44567	4,020.45	309.3
2080	A80, LUDLOW LIQUOR AGENCY	7	8194	738.33	105.5							
TOTALS									402	297,420	25,578	63.6

Consider a reduced delivery frequency for low volume accounts or implementing a minimum delivery quantity.

Security Observations



Security Observations

- Security at the DLC warehouse needs to be improved:
 - The area around the warehouse is not secure.
 - Potential exists for someone to try to rob the operation thinking cash might be present from deliveries.
 - Over the road drivers could take product since the front office is not always staffed.
- Current security includes motion detectors and door alarms which are only effective when the warehouse is closed.
- Security card entry locks should be installed on both warehouse entrances.
- Security cameras should be installed inside the warehouse to monitor personnel doors and dock doors.
- External cameras should be considered if employee vehicle theft becomes a problem or to document inbound truck accidents since turning clearance is an issue.
- Side door for loading empty bottles needs to be secured during the day.

Unsecured Perimeter



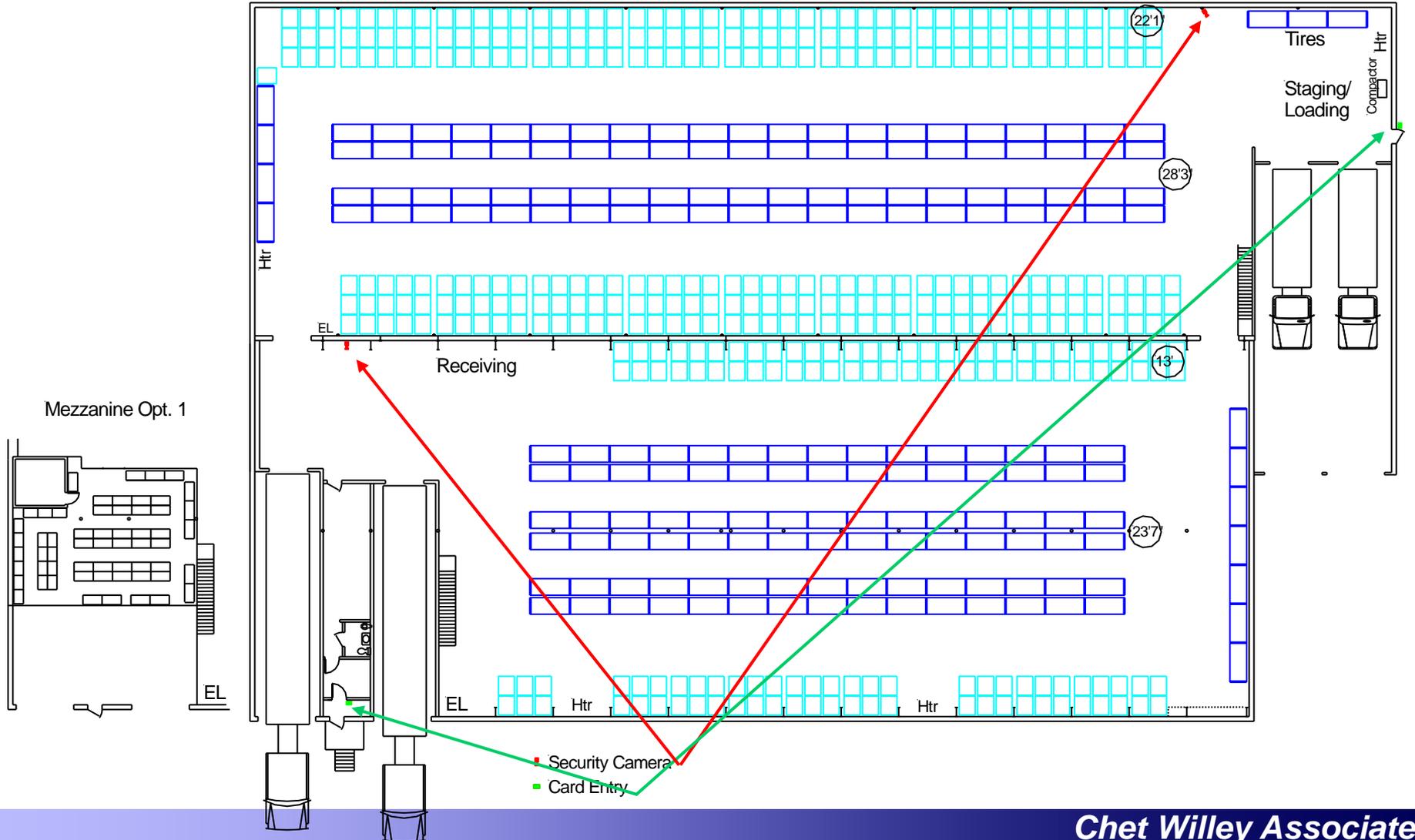
- Employee entrance unsecured during operations and the other exterior door open to dispose of recycled bottles and to allow air flow during truck loading.

Unsecured Perimeter



Security Installation Locations

Vermont Liquor Warehouse Layout Option #1



Safety Issues

Safety

- The Vermont Department of Labor recently conducted a safety inspection of the DLC warehouse and found several serious situations which are being corrected.
- I have included additional recommendations that should be addressed that could result in fines during an OSHA inspection.
 - Replace all damaged rack uprights
 - Replace 16 uprights that are undersized
 - Install weight capacity signs for all racks
- Removing the mezzanine also eliminates 2 serious conditions noted in the safety inspection.

Safety Concerns

- All damaged and undersized rack uprights should be replaced before an accident occurs.
- An upright that is damaged could collapse an entire row of racks if it were hit again.



Fort Worth-based Pier 1 Imports says employee safety is "of the utmost importance."

The Associated Press

OSHA fines Pier 1 for safety violations

Three serious violations were found at two distribution centers.

By Steve Kaskovich
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The Occupational Safety and Health Administration fined Pier 1 Imports \$86,100 for safety violations at two Fort Worth-area distribution centers.

In a news release issued Monday, OSHA said it cited the Fort Worth-based home furnishings retailer for two serious violations at its Fort Worth distribution center on Trinity Boulevard. According to the citations, forklift operators "were not trained, evaluated and certified by persons who have the knowledge, training and experience to train them, exposing the employees ... to hazards."

A third serious violation was cited at the company's Mansfield location on Heritage Parkway involving damaged storage racks that exposed employees to "falling objects and struck-by hazards."

OSHA said it began the inspection after being notified that an electric pallet jack had struck an employee who was subsequently hospitalized.

"Pier 1 Imports exposed workers to hazardous but preventable conditions and ultimately jeopardized the safety of their workers in doing so," said Jack Rector, OSHA's area director in Fort Worth. "This complaint and report of a hospitalization have identified continual hazards which require immediate corrective action to prevent

further injuries."

In a statement, Pier 1 said the safety of its employees is "of the utmost importance."

"We strive to ensure that our associates have a safe work environment," the company said. "Pier 1 Imports is fully cooperating with the Occupational Safety and Health Administration regarding the recent matter. We are not able to share any additional information at this time."

OSHA said Pier 1 has 15 business days from the receipt of the citations to comply, request an informal conference with OSHA's area director, or contest the citations and penalties before the independent review commission.

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Replace Undersized Uprights



3" x 1.5" upright on left vs 3" x 3" on the right.

Damaged Uprights



Option 1 Eliminates Mezzanine



- Eliminating the mezzanine will clear two serious safety issues: Not having a barrier to prevent falls and damaged lights under the mezzanine.

Over Short & Damage Observations

Over, Short & Damage

- Warehouse procedures are in place to record warehouse damage by code. Damaged product is stored in racks until it is recorded and destroyed.





Over, Short & Damage Report

- Procedures are also in place to record product damaged during delivery but it is not broken out as a separate category.
- The following report is a summary of OS&D entries from June 2 through August 14.
- Approximately 1,000 bottles were reported damaged. With around 1,000,000 sold during the 3 month period, that is a damage rate of 0.1% which is excellent if those numbers included all damage.
- One alternative for product disposal (full bottles) would be Parallel Products in North Boston, MA (<http://www.parallelproducts.com/beverages.html>). They can recover the Federal Excise Tax on the products destroyed.

Over, Short & Damage Report

CATEGORY	# OF ENTRIES	%
Warehouse Damage	364	98%
Ommission in Packing	1	0%
Wrong Contents	1	0%
Dry Breakage	3	1%
Defective Bottle	2	1%
TOTAL	371	100%



OS & Damage Recommendation

- I was unable to locate any reports showing overs/shorts or inventory variances. There should be monthly inventories taken showing variance of what was received, less quantity shipped, minus damage so that management can control the cause of the variance.
- Summary reports should be developed to allow tracking of damage in more definitive categories such as truck damage by driver, warehouse damage by employee, etc.
- Although employee theft does not appear to be a problem, better controls are necessary to monitor the degree of losses that are occurring other than warehouse damage.
- Goals should be established and monitored on damage and losses.



Conclusions

- The current warehouse floor and cubic capacity is well utilized. Product is picked from all levels of the racks and most rows on the floor.
- By implementing Option 1, the current warehouse capacity should be sufficient for four or five years.
- Based on the small number of pallets in row storage, there is not justification for operating out of 2 facilities to extend the life of the warehouse. Most of the space in the warehouse is used for picking and it is not efficient to try to pick product from two separate warehouses.
- Although productivity would be increased substantially with Option 2 by using case flow and double pallet walkie riders, the ROI would barely be realized before a new warehouse is required and capacity is decreased.
- Delivery cost savings could be significant but additional study is needed.
- Warehouse security needs to be improved with security cameras and card readers on personnel doors.
- Numerous racks are damaged or are under sized for the application and should be replaced.
- OS&D tracking needs to be improved, goals established and tracked.



Recommended Changes

1. Implement layout Option 1 to extend warehouse life by 4 to 5 years.
 - a. Replace 32 - 3"x1.5"x14' undersized uprights in old addition with 3"x3"x16' uprights from the center row.
 - b. Purchase and install 32 – 3"x3"x18' uprights in the center row to increase pallet storage from 3 to 4 high gaining 60 pallet positions. Approximate cost = \$10,000 plus installation and cost to move product. Includes new beams and wire decking.
 - c. Move mezzanine pick area to office area over warehouse entrance to increase pallet storage by 296 pallet positions and bottle pick slots from 960 to 1,075 for an increase of 115 slots. Eliminates safety concern.
 - d. Both changes increase rack positions by 356 or 31%.
2. Install at least 2 security cameras to monitor receiving, shipping and entrances to the warehouse.
3. Install card access readers to control both personnel entrances. Camera and card readers locations shown on Option 1 layout drawing.
4. Implement improved over, short & damage procedures and establish goals with monthly tracking reports to monitor progress.

Recommendations

5. Replace all damaged rack uprights to eliminate potential rack collapse.
6. Perform a detailed study of delivery operations to change to 5 day deliveries and establish minimum delivery guidelines.
7. Planning should begin immediately to locate land and initiate design of a new warehouse. The warehouse size should be a minimum of 60,000 SF plus any office space required.

There are many smaller recommendations that could be made but these are the top 7 that need to be addressed.