

Port Townsend Paper Corporation

Local people sustainably making international products since 1927



Port Townsend Paper Corporation

(Almost) 100 Years of History



*National Paper Products
Pt. Townsend Wash April*



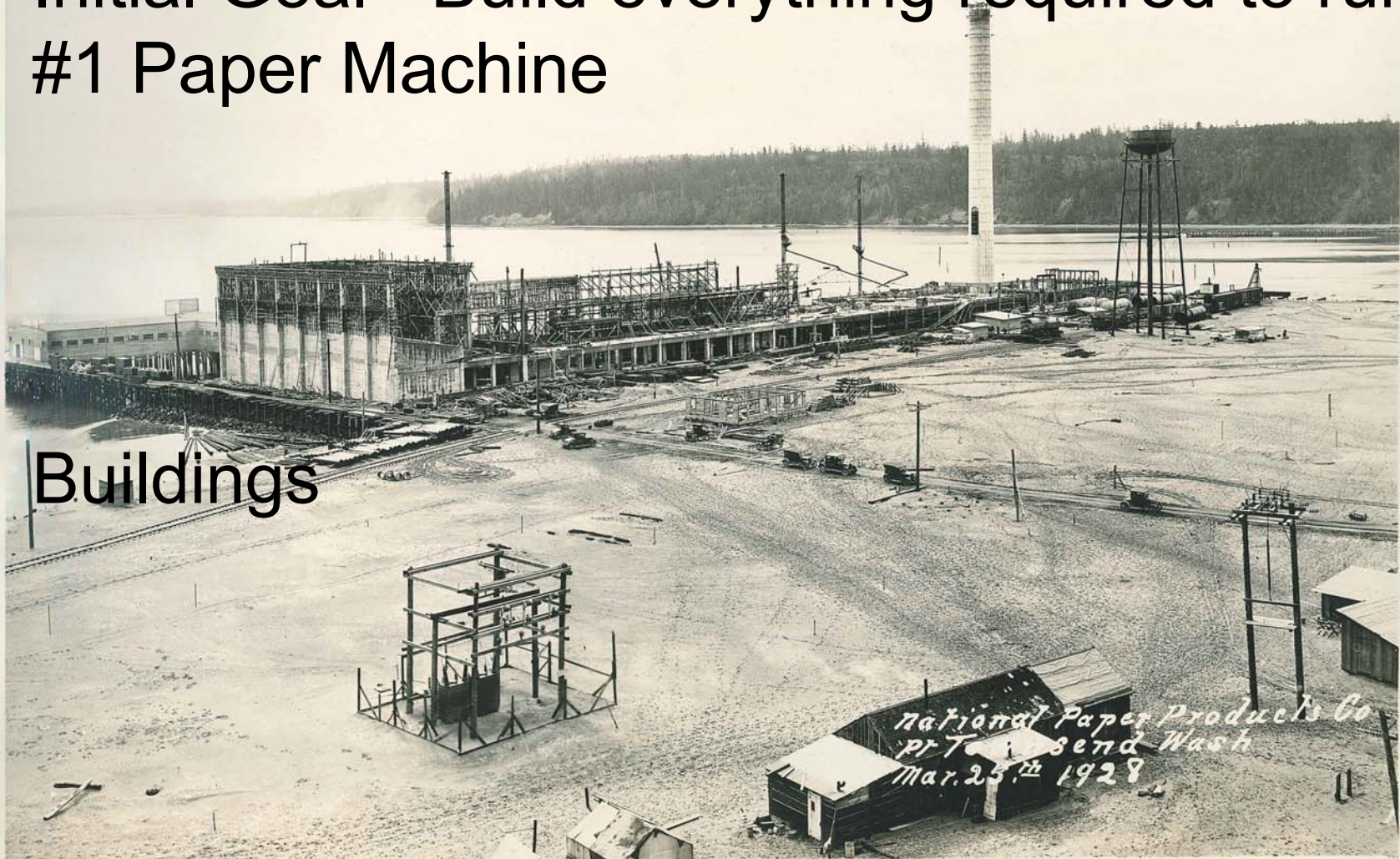
- **1927 – National Paper Company** begins construction of new Paper Mill in Glen Cove





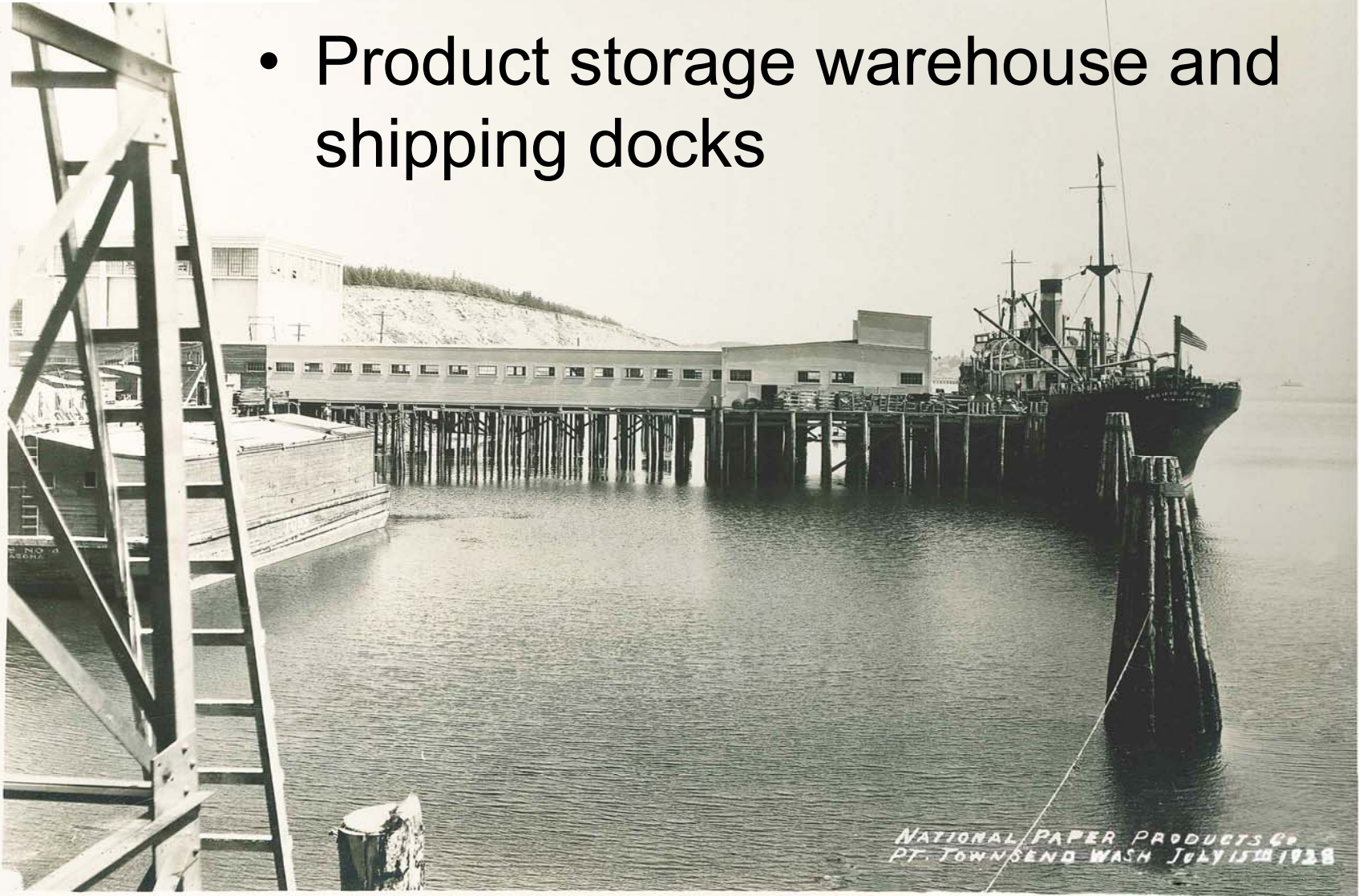
- Initial Goal - Build everything required to run #1 Paper Machine

- Buildings



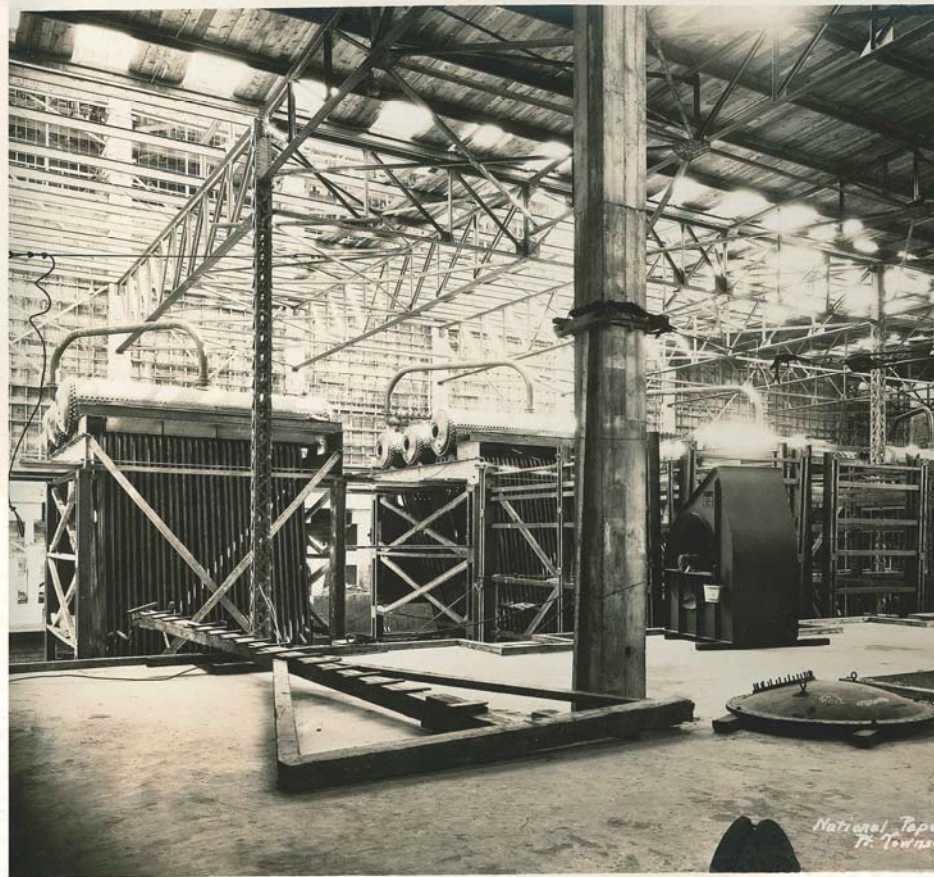


- Product storage warehouse and shipping docks





Boilers for steam production



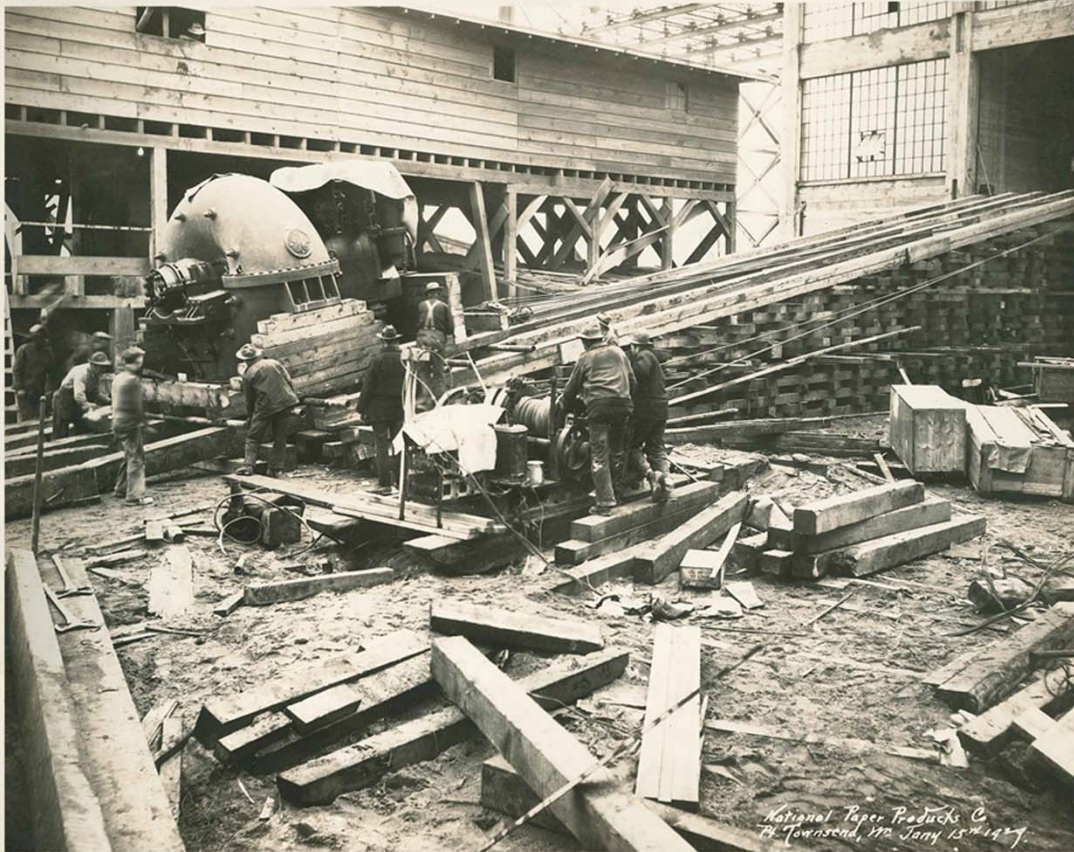
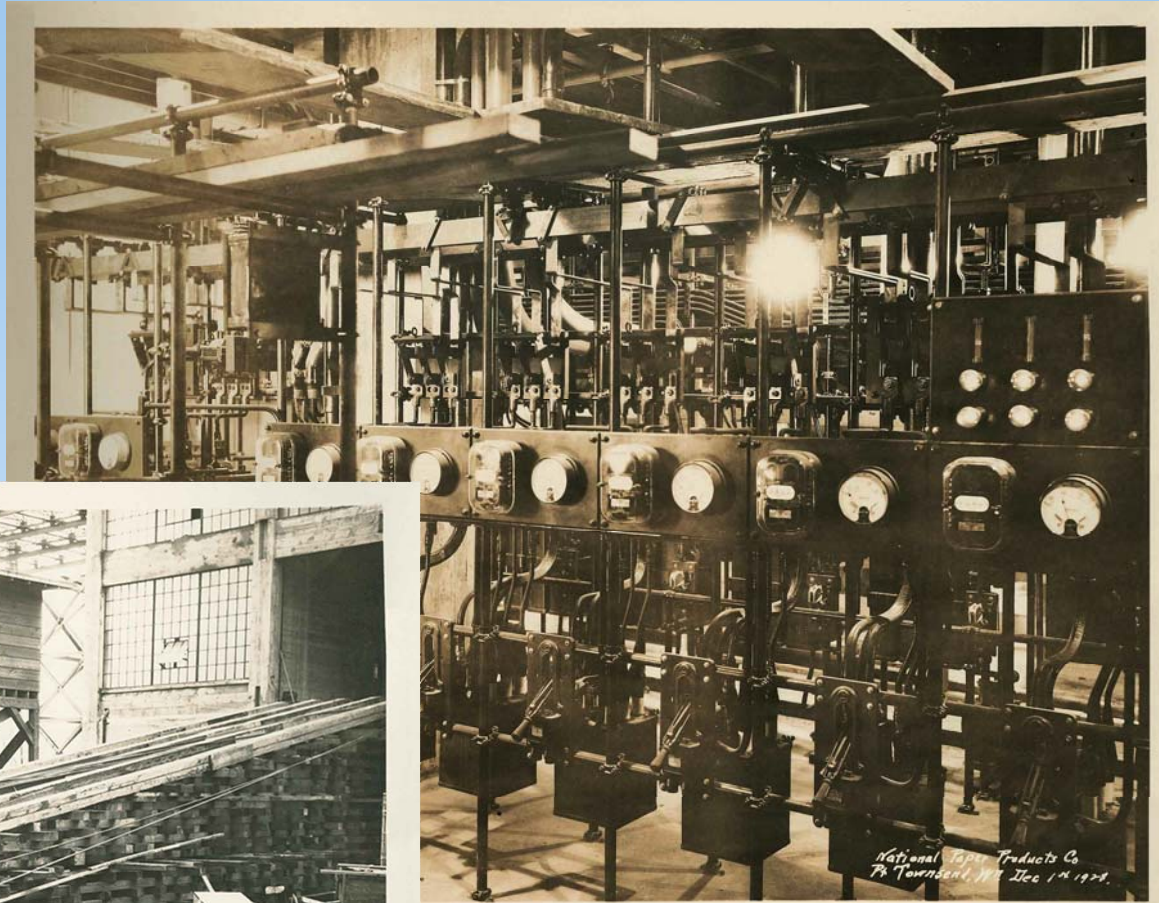
National Paper Products Co
Pt. Townsend, Wt. July 22 '28



National Paper Products Co
Pt. Townsend, Wt. July 24 '28



- Power generation

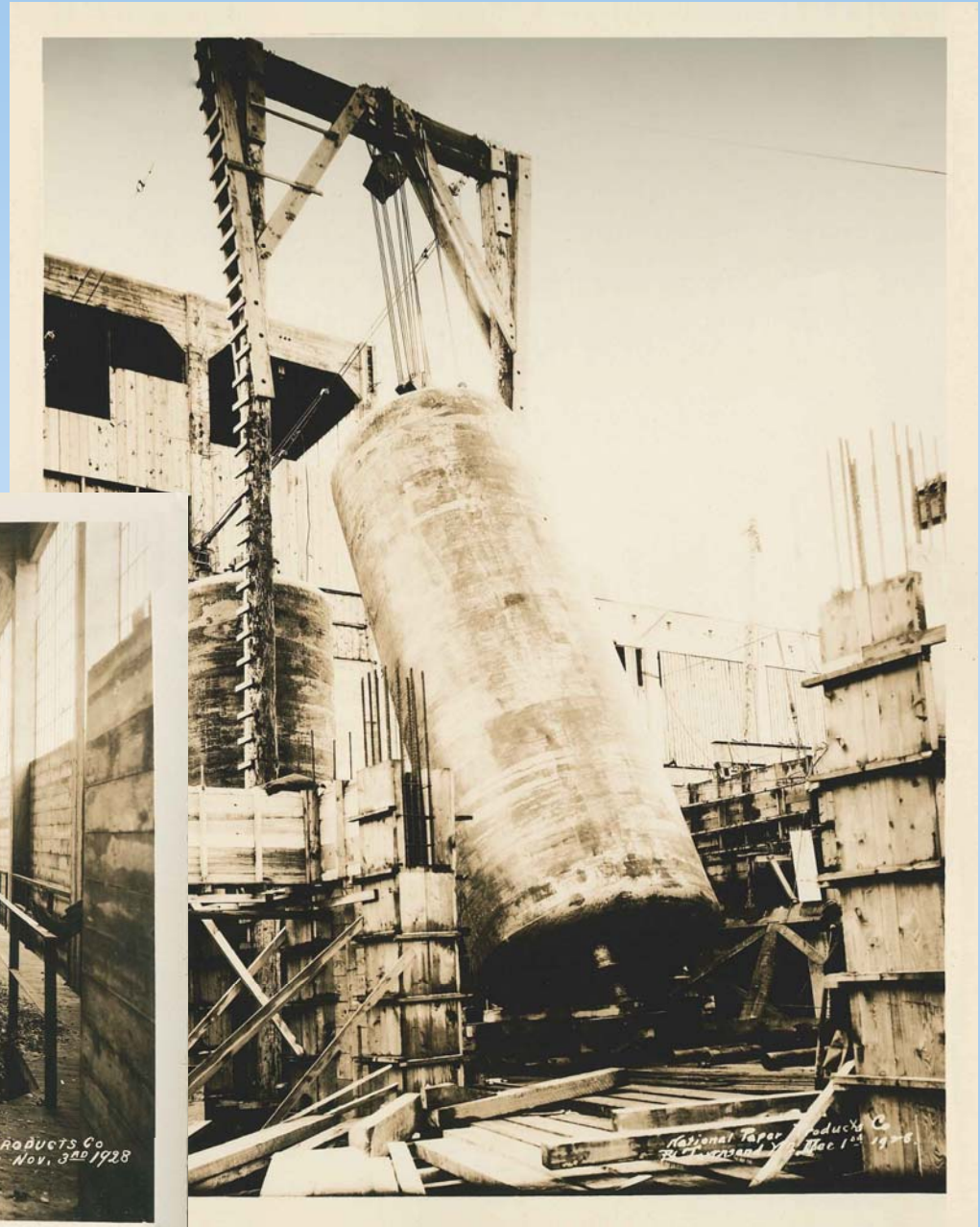


*National Paper Products Co
Port Townsend, WA Jan 15, 1927*

*National Paper Products Co
Port Townsend, WA Dec 1, 1927*



- Pulp Digesters to cook wood chips



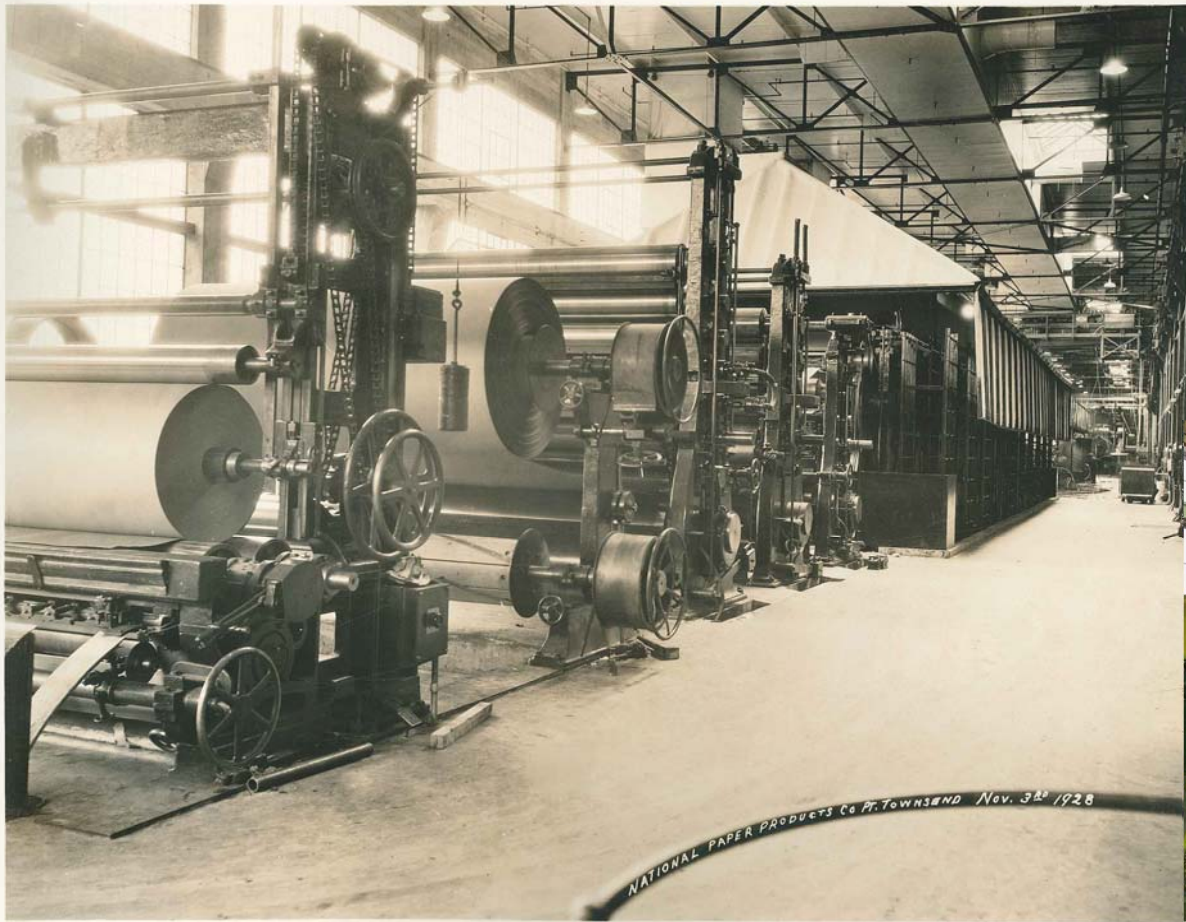


- The “Beaters”



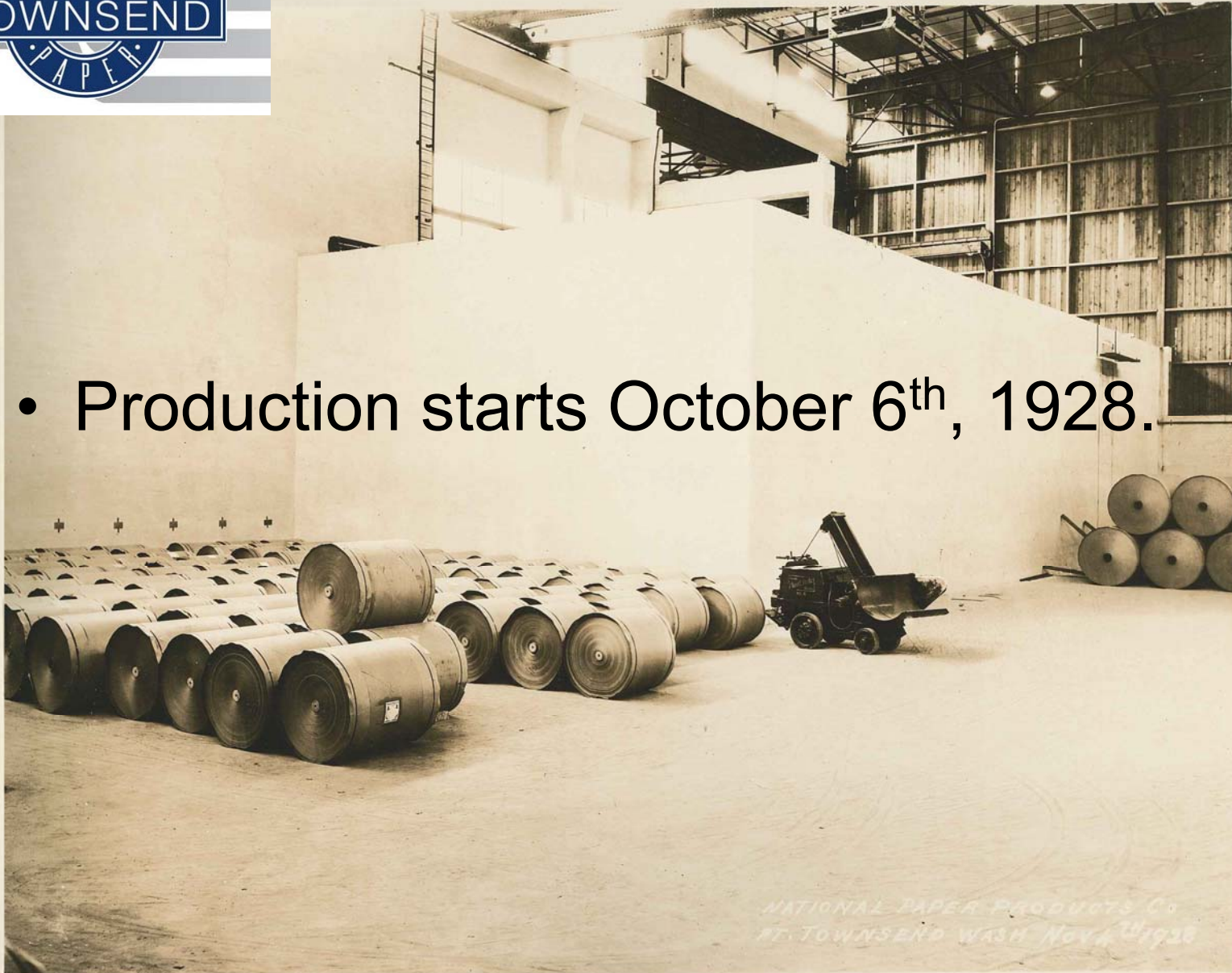


- The #1 Paper Machine - Linerboard





- Production starts October 6th, 1928.



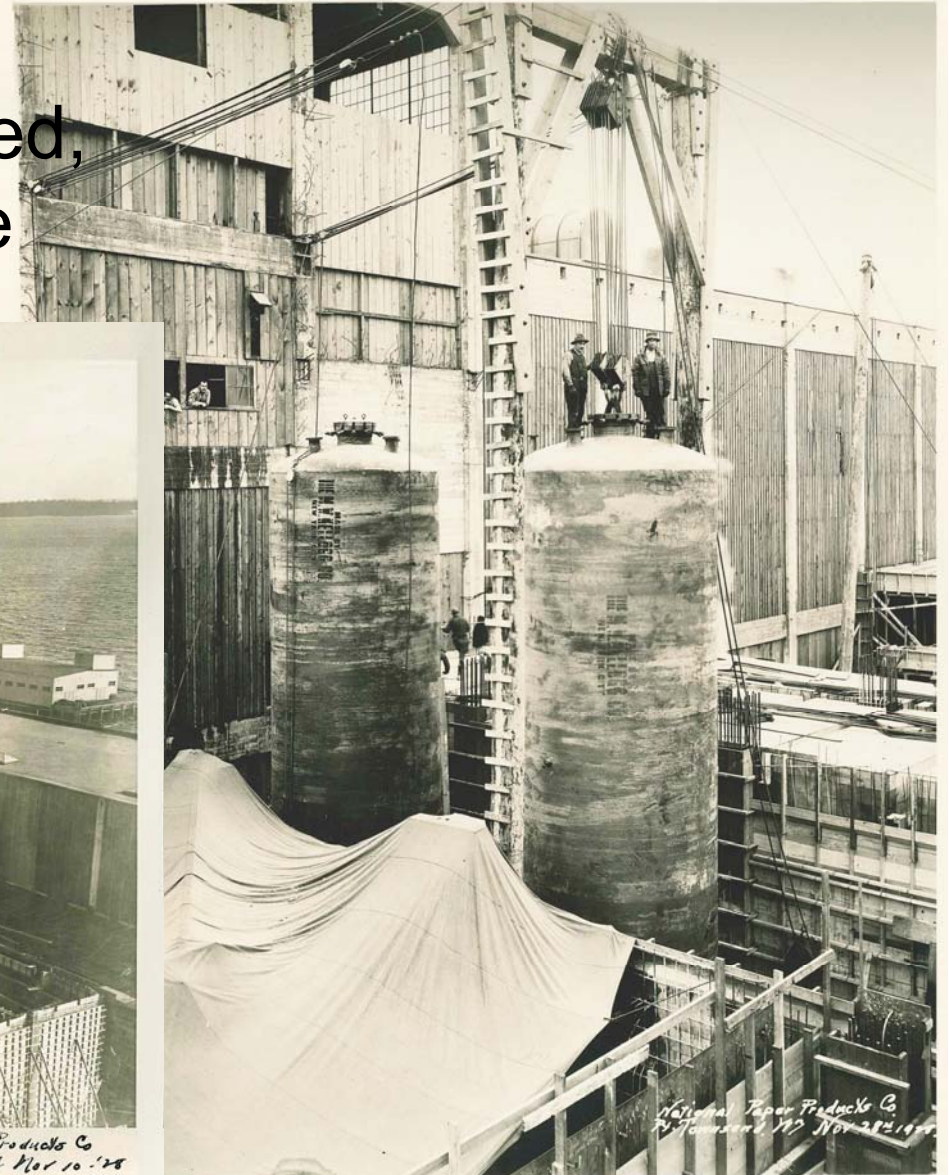
NATIONAL PAPER PRODUCTS CO
PT. TOWNSEND WASH NOV 4th 1928



- Before PM1 was completed, work began to expand the mill for #2 Paper Machine



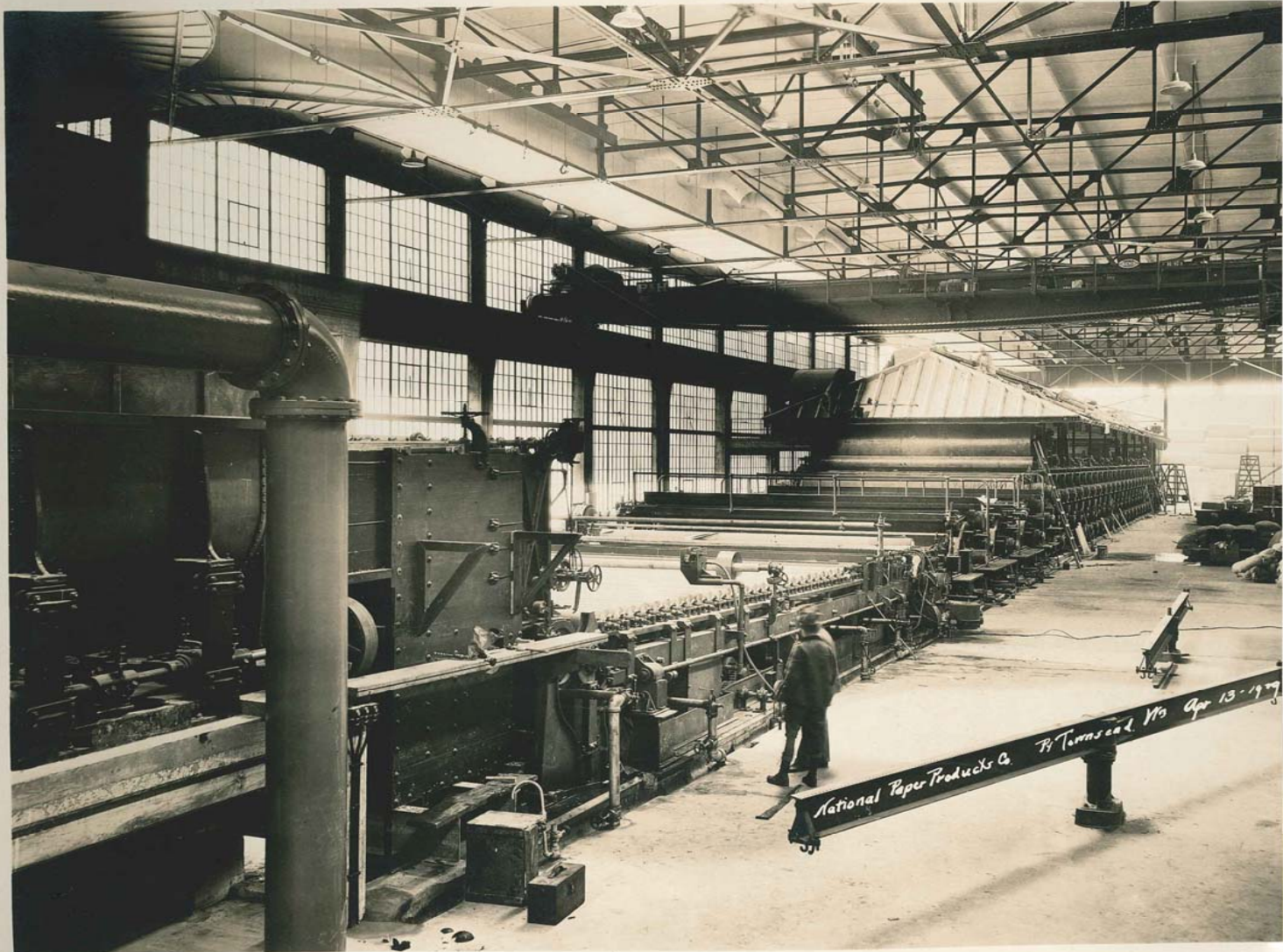
National Paper Products Co
Port Townsend, WA, Mar 10, '28



National Paper Products Co
Port Townsend, WA, Nov 28, 1928



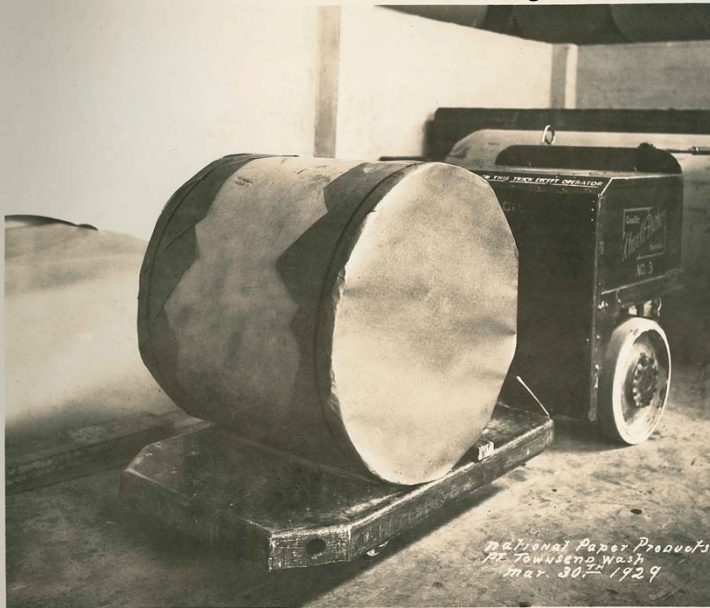
- The largest Kraft Paper Machine in the world (in 1929)





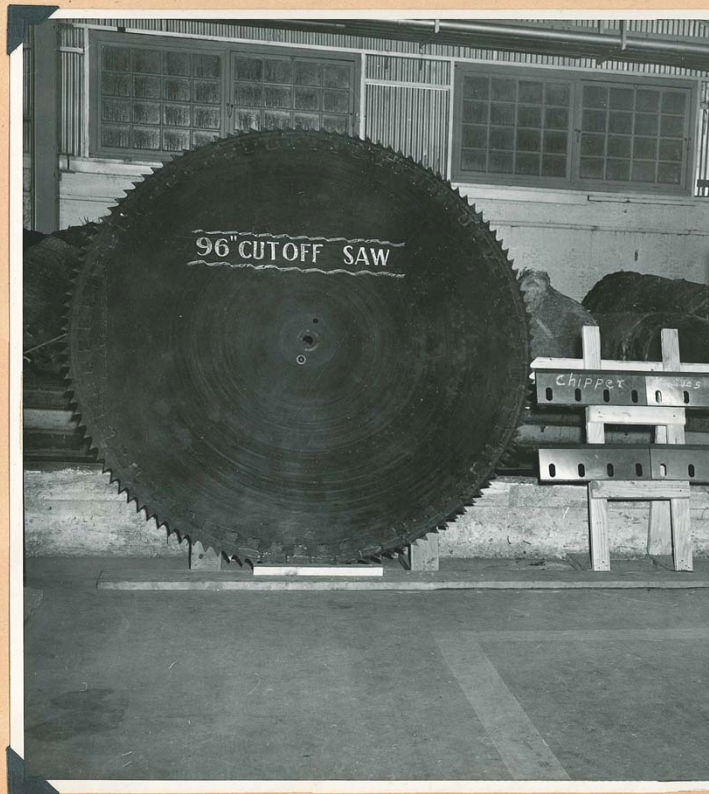


- 1929 –
produced 70,000
tons of paper
- 275 Employees
- \$325,000 Payroll



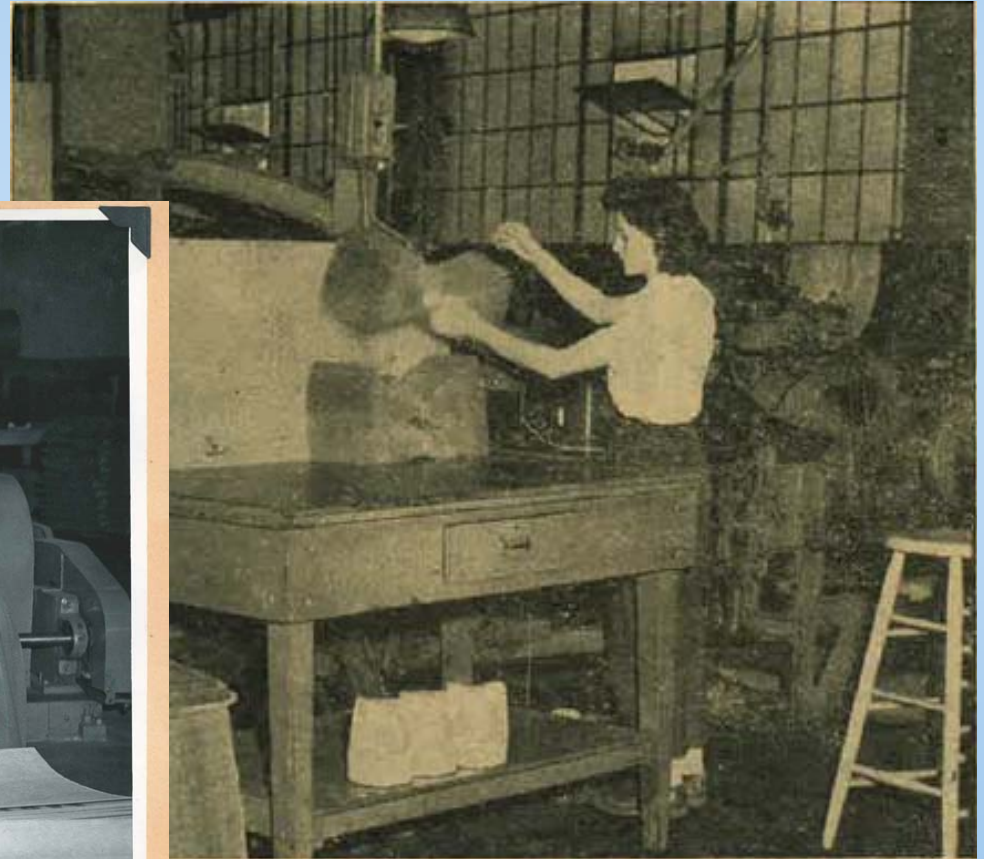


- 1933 – Woodmill added to improve wood supply
- 375 employees





- 1935 – Bag Plant opens
- 415 employees
- \$626,000 payroll





- 1948 – “Multi-Wall” bag plant
- “Officially” **Crown Zellerbach**
- 630 employees,
- \$2,200,000 payroll



WASHINGTON

Page Five

Men and Women

Wanted Immediately for
Essential Local Industry

PULP AND PAPER

BASE RATE **90c** PER HOUR
(Time and one-half over 40 hours)

Positions open for qualified mechanics, helpers on paper machines, girl
helpers in pulp mill and laborers

Inquire Personnel Office at Plant or Phone 582

(Authorized Referral Required)

Crown Zellerbach Corporation



- 1952 – Ramped up bag production
- ~700,000,000 bags per year!
 - Grocery, lunch, sugar, multi-wall
- Mill production 125,000 tons paper per year

1955 –
820 Employees (pinnacle)
\$3,800,000 payroll





- 1969-1977 – Process and Environmental improvements
 - 1969 - New CE Recovery Boiler
 - 1975 – Modern lime kiln
 - 1977 - New Biomass Boiler





- 1971- Primary Effluent Treatment (Clarifier)
- 1978 – Secondary Treatment (ASB)





- 1979 – Labor Unrest!
 - Business climate very challenging
 - Company wide labor strikes
 - Multi-wall bag plant closes permanently
 - Employee count drops to 720



- **1983 – Port Townsend Paper Corporation!**



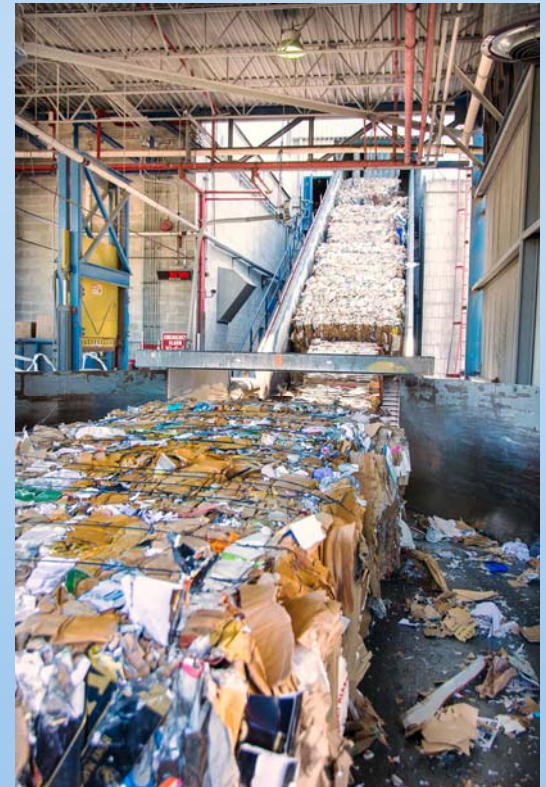
- Crown Zellerbach preparing to close the mill
- Haindl Paper GmbH (West Germany) buys mill
 - Restructure operations
 - Reduce employee count to 500



- Expansion years 1984-1996
 - 1984 - Upgrade PM2 press section
 - 1986 – (\$25,000,000)
 - Installed C Side pulping line
 - Replaced PM1 forming section
 - Installed E Set evaporators
 - Purchased Bag Plant in Portland, OR



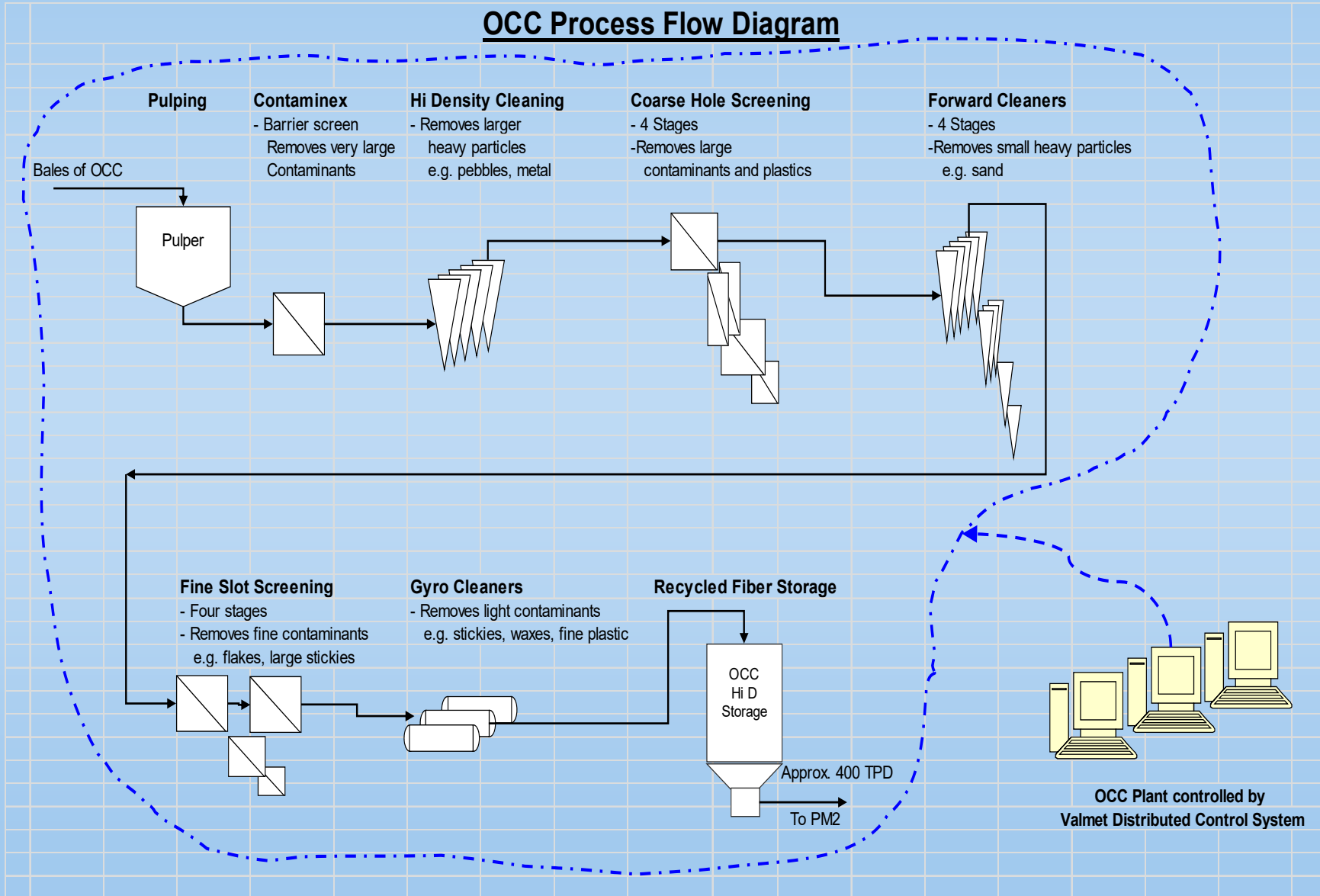
- Expansion Years –
 - 1991 – Valmet rebuild PM2 (\$45 MM)
 - 1993 – Install chip thickness screens
 - 1996 – OCC Plant – 300 tpd (\$25 MM)



The OCC Plant

Recycle old used cardboard and convert it into pulp that we can reuse.

OCC Process Flow Diagram





- 1997 – Yet Another Owner
- Haindl Paper prepares to close the mill
- Northwest Capital Appreciation buys the mill
 - Mill produces **227,000** tons paper per year
 - Restructures the business
 - **Reduce** employee count to 435



- 2001 – More Changes
 - Close bag plant
 - Mill headcount shrinks to ~300
 - Mill produces 280,000 tons of paper
 - Buy Crown Packaging Ltd, BC Canada
 - Adds 4 box / sheet plants (\$61MM)

CROWN CORRUGATED COMPANY





- 2007 – GoldenTree Assets acquires Crown Packaging and the Mill
 - Mill workforce stable ~280-300
 - Mill produces 320,000 tons



• 2008 – Conservation Easement

- **Trust for Public Lands & Washington State Parks**
- Eliminate future development of forest land and conserve 250 acres of critical habitat for the future
- Included transfer of 29 acres to Fort Townsend State Park





- 2015 – New Owner
- Lindsay Goldberg forms Crown Paper Group
 - Life gets busy!





- 2015 – Environmental Improvement

- Boiler MACT

- Power Boiler #10** – Biomass (hogfuel) boiler

- Installed new equipment and controls - ***\$10.5 MM***

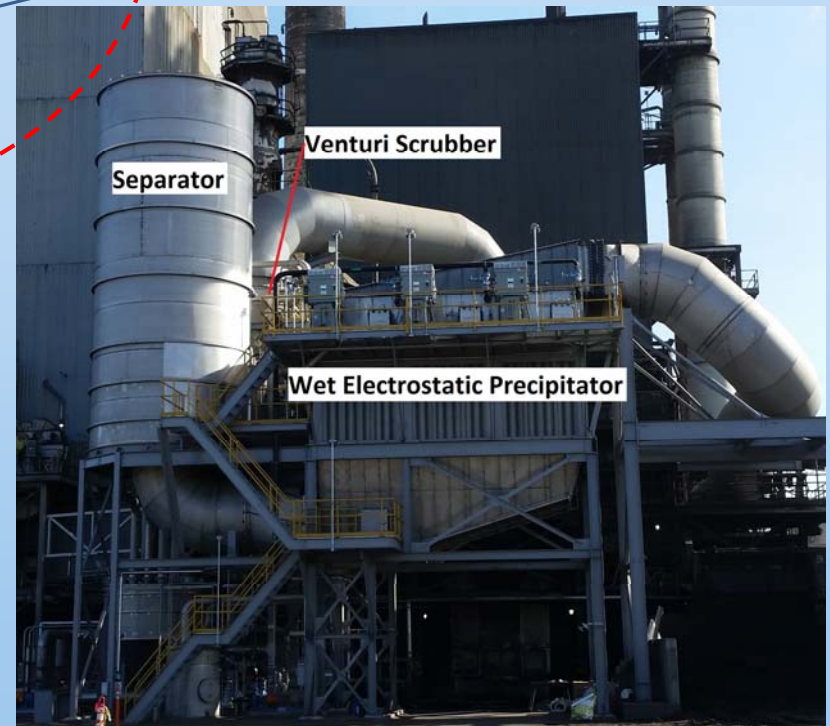
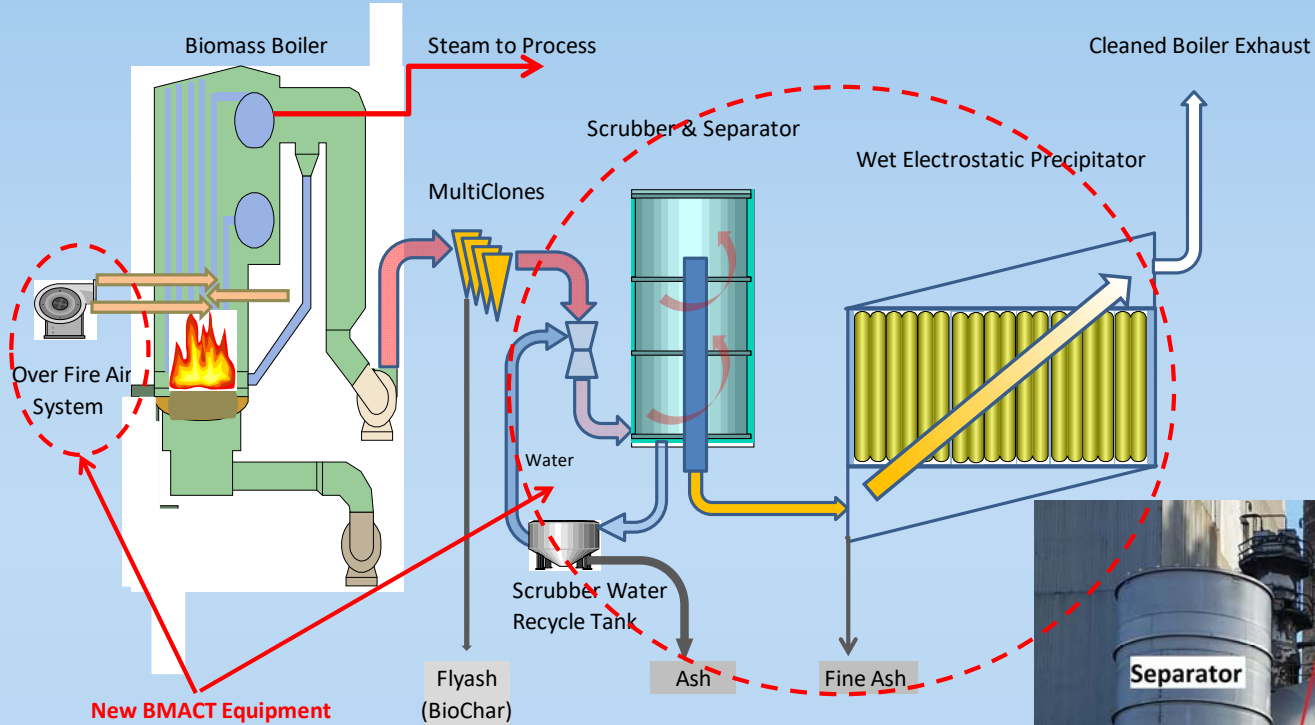
- reduced **CO** ~50%

- New venturi scrubber and Wet Electrostatic Precipitator (WESP)
reduced **PM** (TSM) by 70%

- Package Boiler** –

- Converted to Natural Gas, which meets all BMACT requirements

PB10 BMACT Overview





- 2016 – A New Choice for Auxiliary Fuel
- Compressed Natural Gas deliveries
 - Xpress Natural Gas





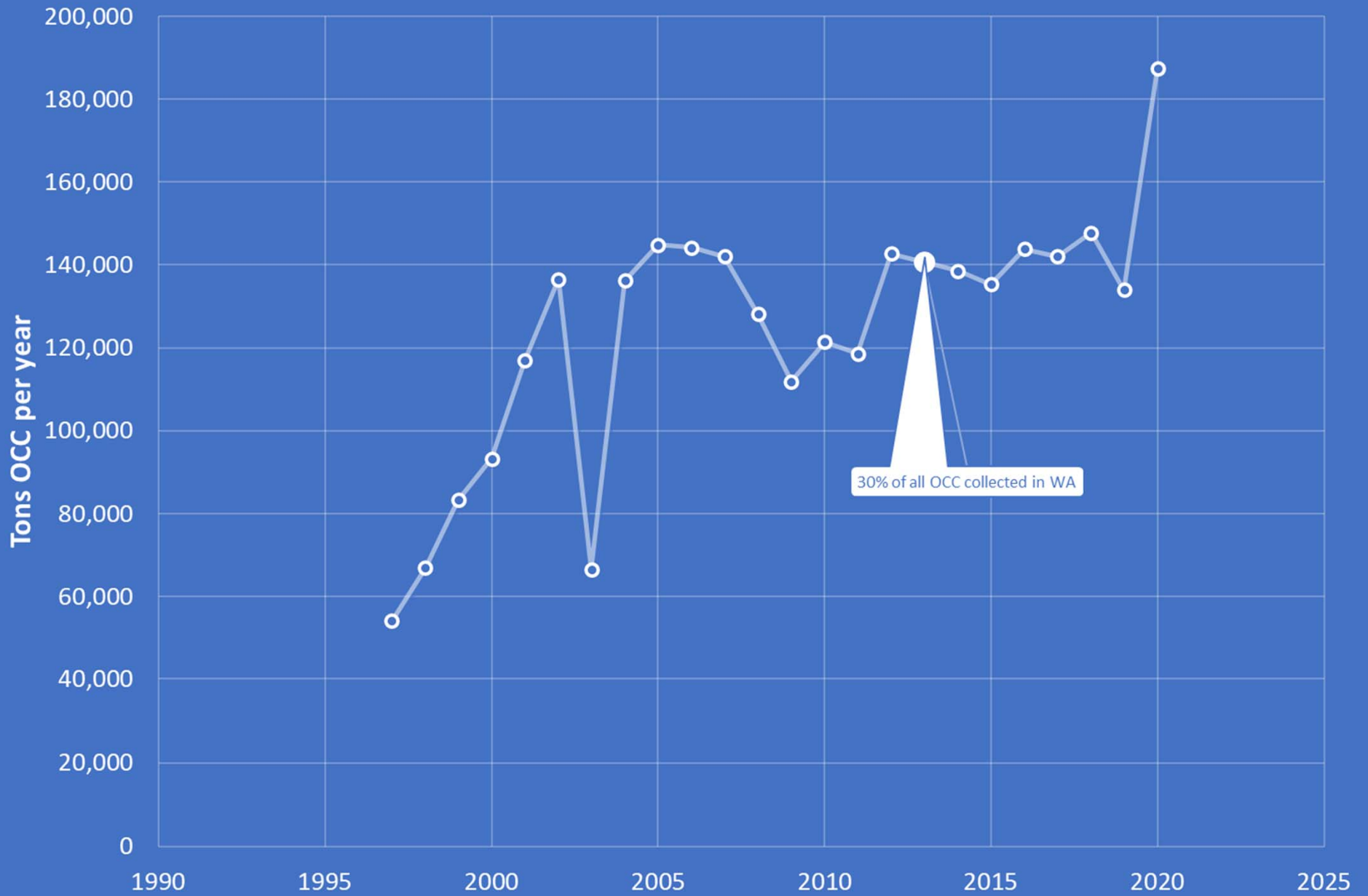
- 2017 – PM2 Former Upgrade
 - \$3MM – improve quality and expand product mix



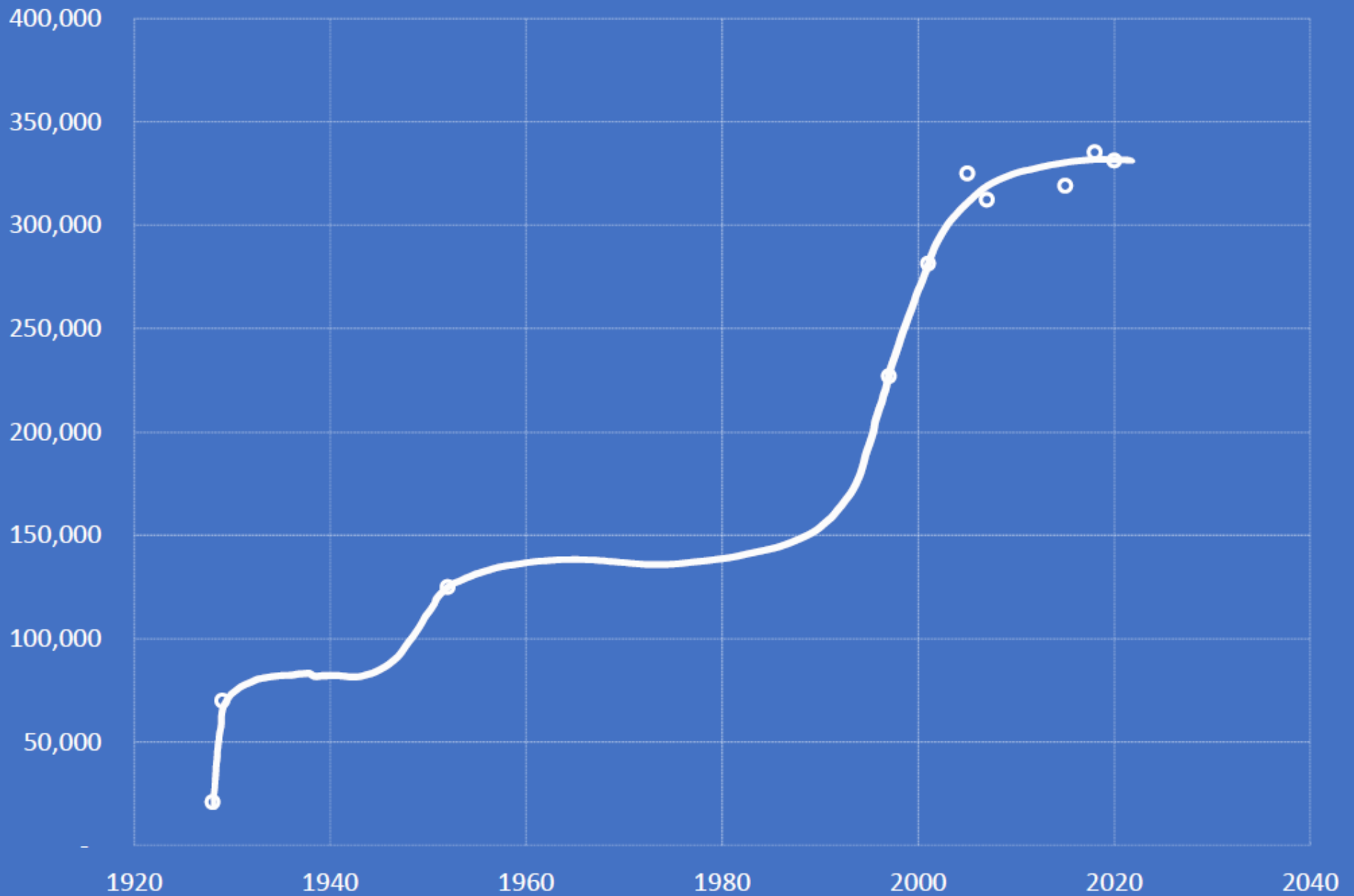
- 2019 – Expand Recycle capacity
 - Design increase to 700 tons/day



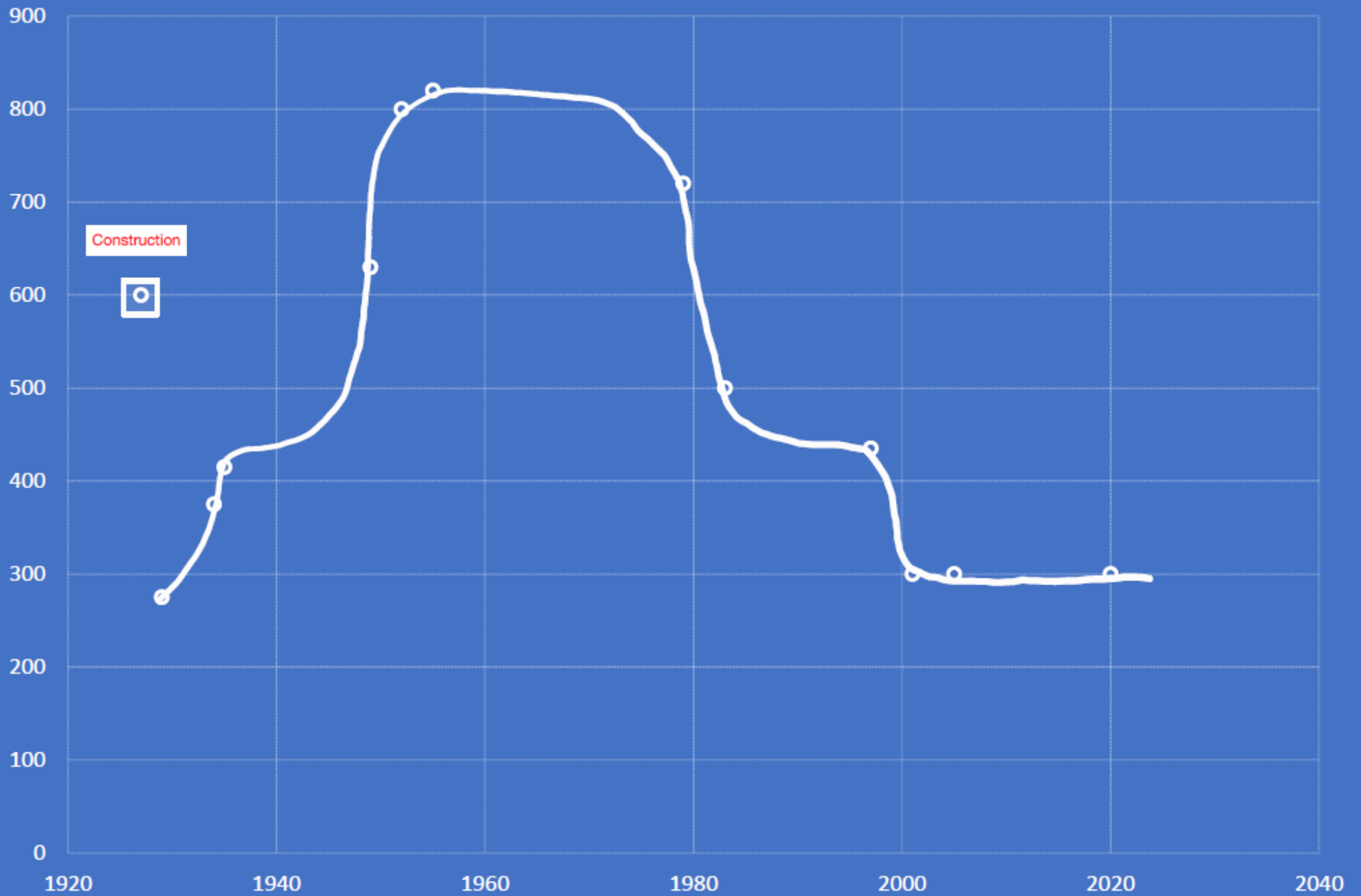
RECYCLING - OLD CORRUGATED CONTAINER



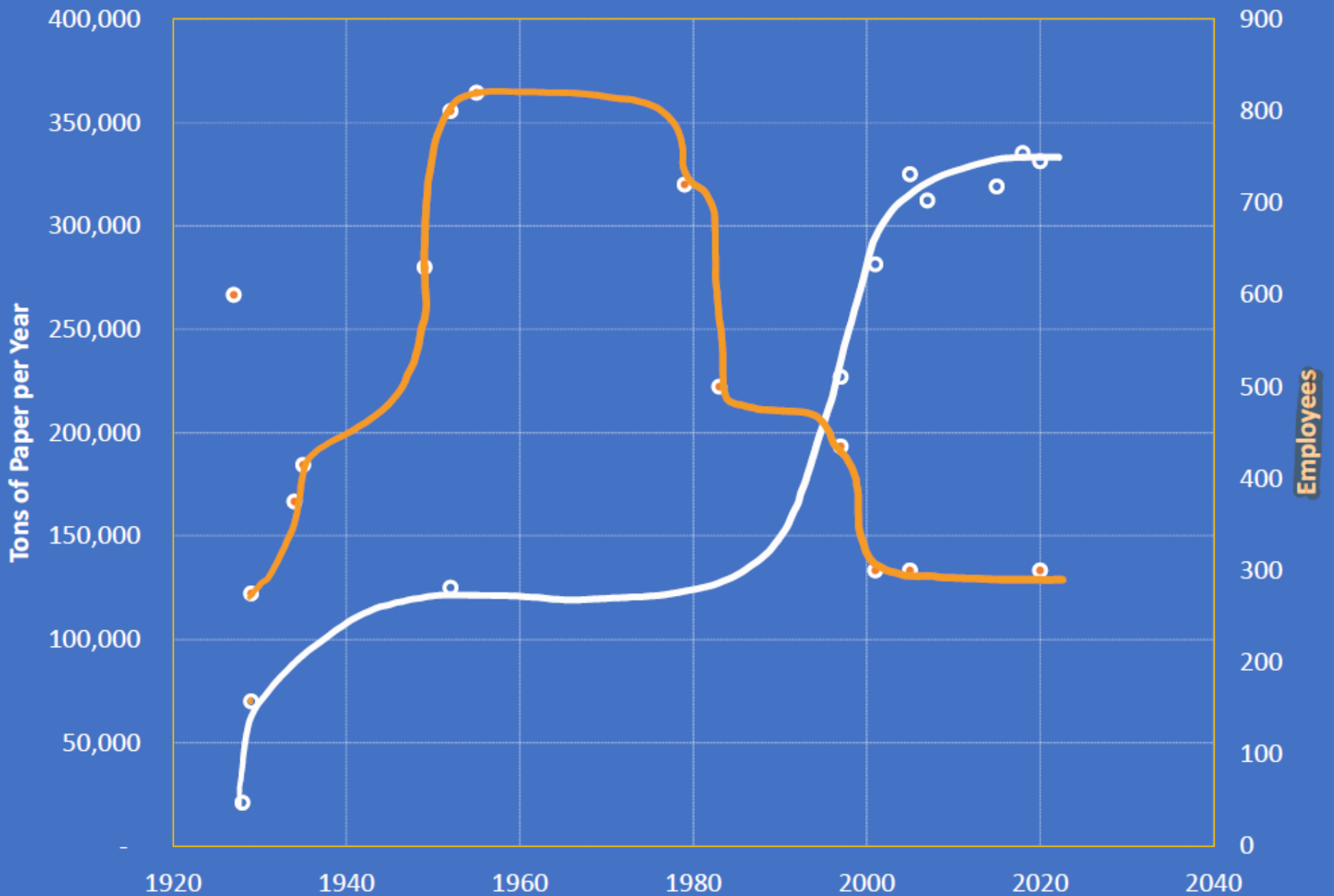
MILL PRODUCTION - TONS PER YEAR



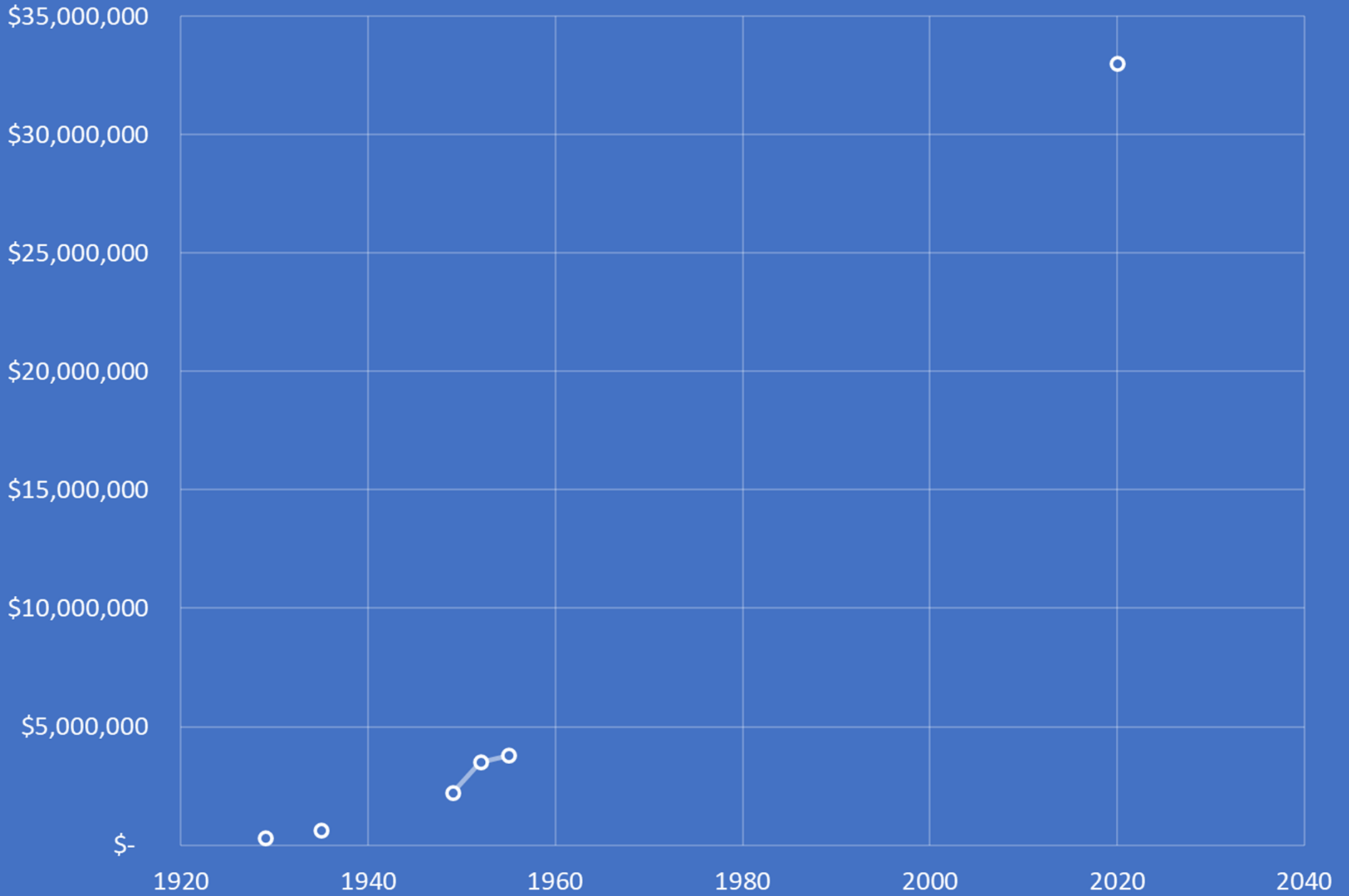
PAPER MILL EMPLOYEES



MILL PRODUCTIVITY



MILL ANNUAL PAYROLL





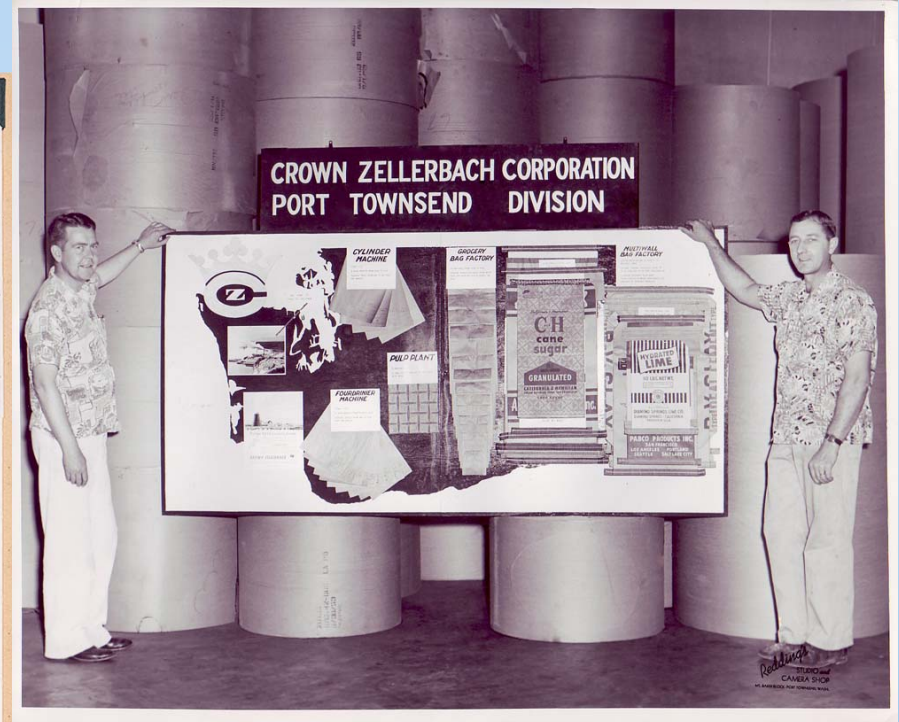
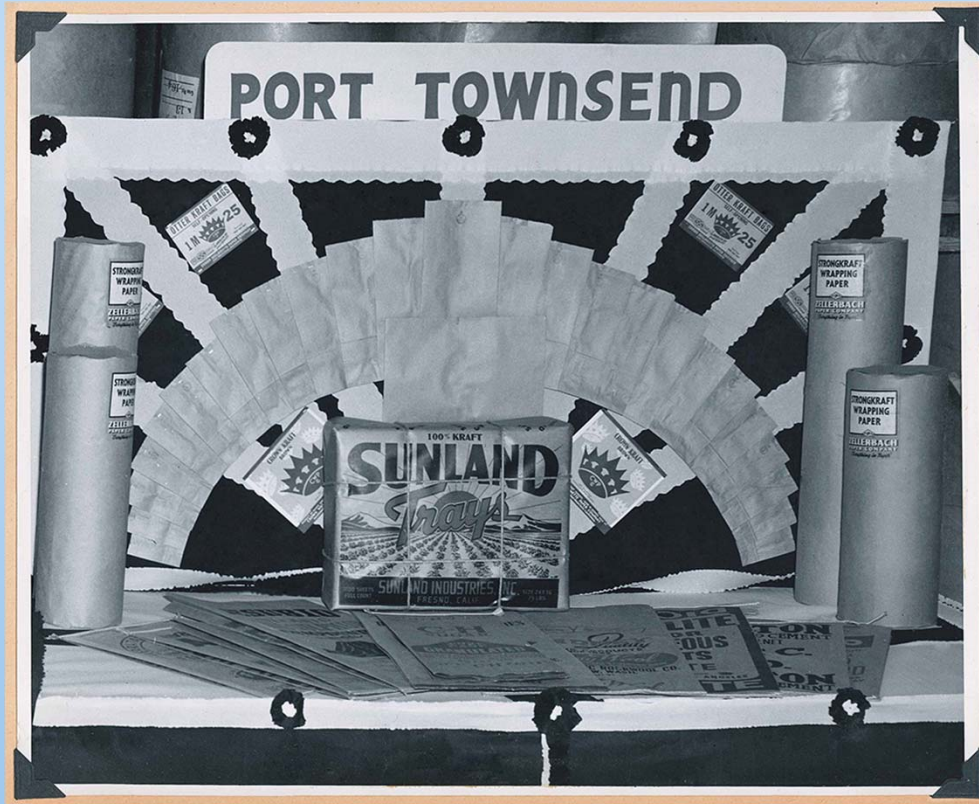
- **Economic Impact in the Community**
 - Direct wages & benefits
 - \$325,000 in 1929
 - \$33,000,000 in 2020
 - Total Local Expenditures
 - \$123,000,000 in 2008
 - \$146,000,000 in 2016
 - Tax Impacts
 - \$2,500,000/yr (local & state, not counting income tax)



- PTPC Products
- “Paper” – It’s all the same, right?
 - Containerboard – Liner & medium
 - Bag – RKB/PTK
 - PSK
 - Specialties
 - “Other stuff”



- Packaging – It's what we do
- Products we used to make





- Current products we make





Shipping

- We ship pulp by barge
- We fill about one barge of 920 units each week

- We ship paper by trucks
- We send out about 850 trucks each month



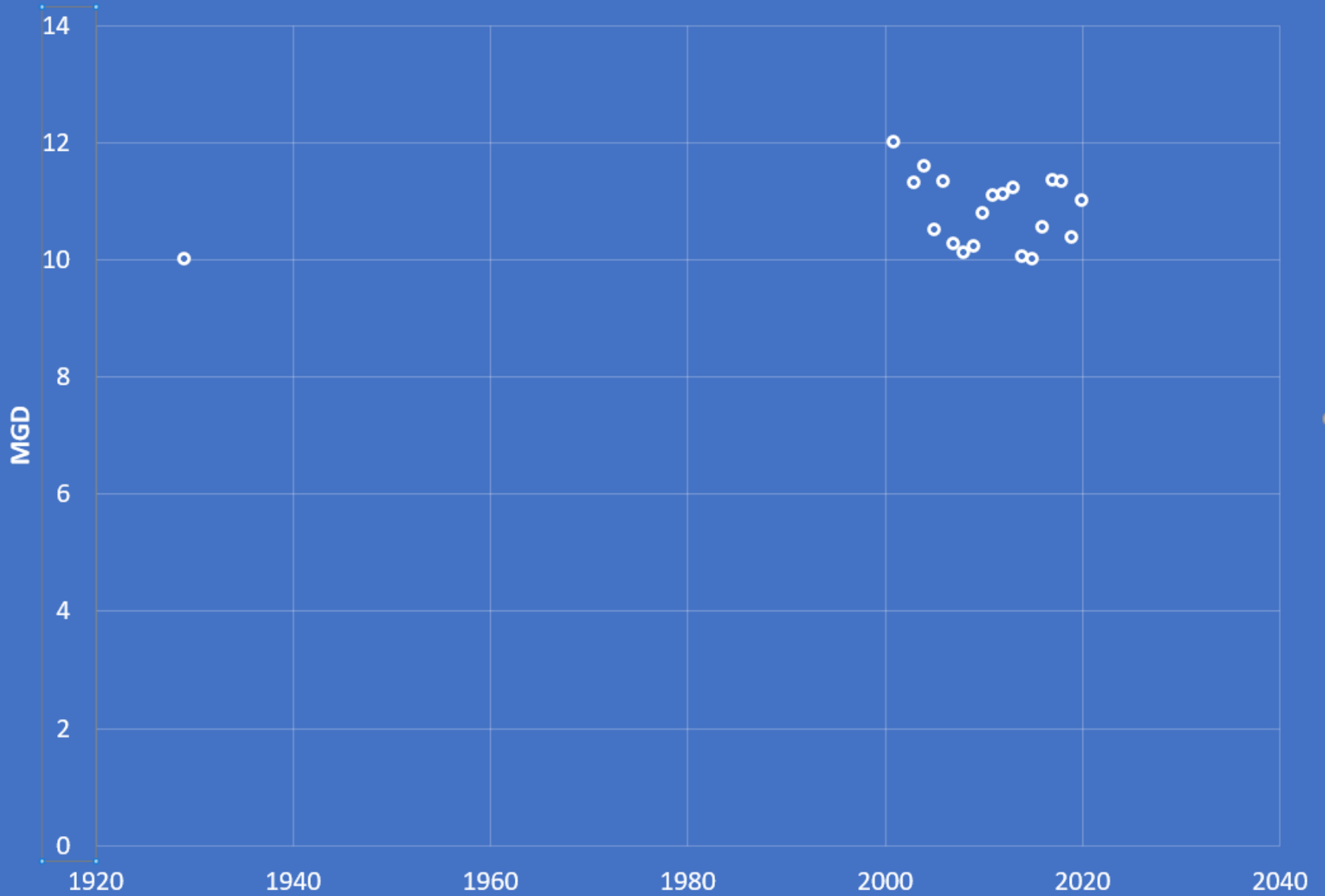


Buying the Fiber

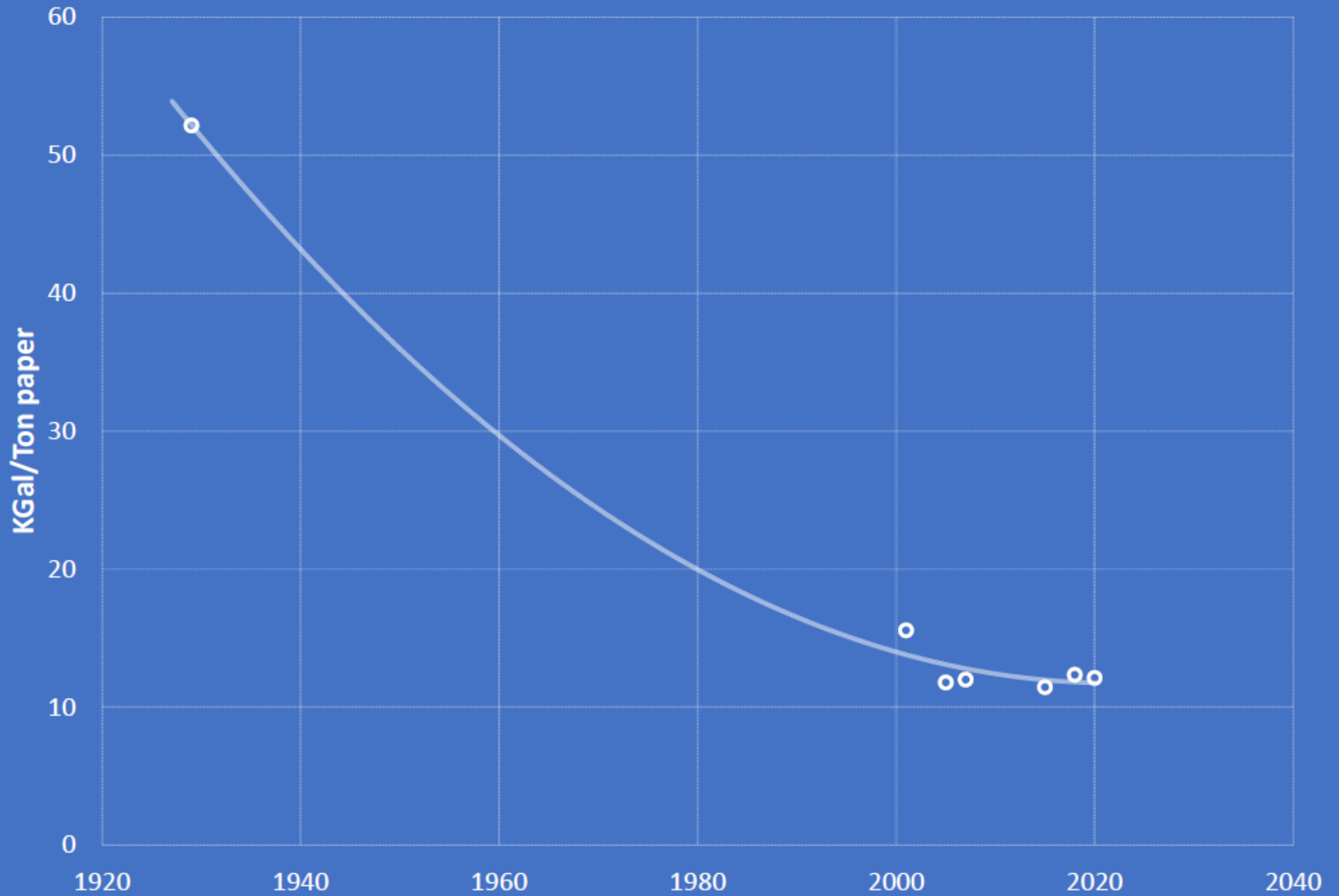
- We buy fiber from various regions with emphasis on *SFI* and *FSC* certification
- We buy whole logs that are chipped up and chips from lumber manufacturers waste (Residuals)
- We buy recycled cardboard from throughout the NW and Canada – *In 2013 we recycled 30% of the cardboard collected in the state*
- *OCC Expansion will increase recycle fiber usage about 50%+*



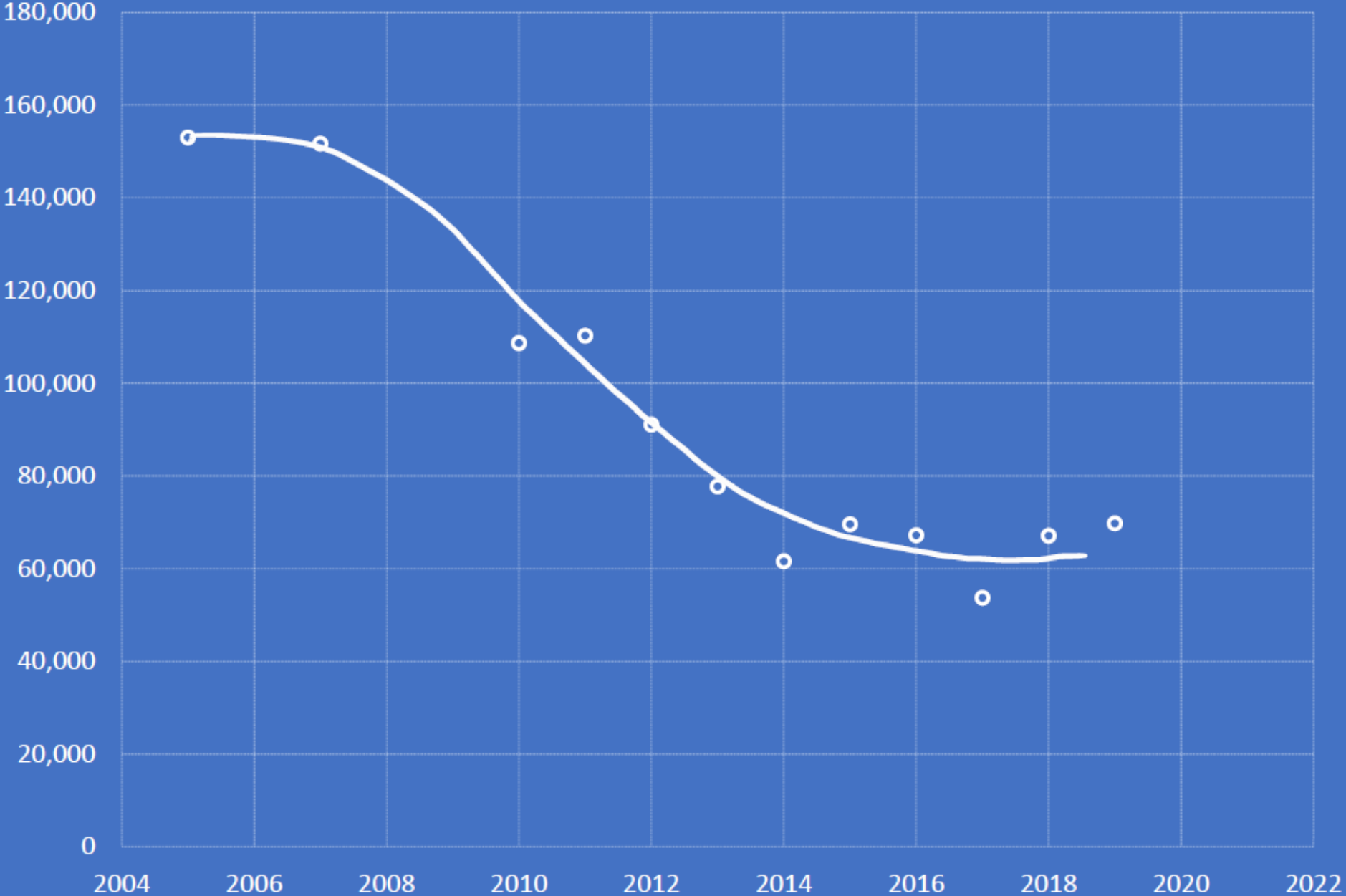
MILL AVERAGE DAILY WATER USE



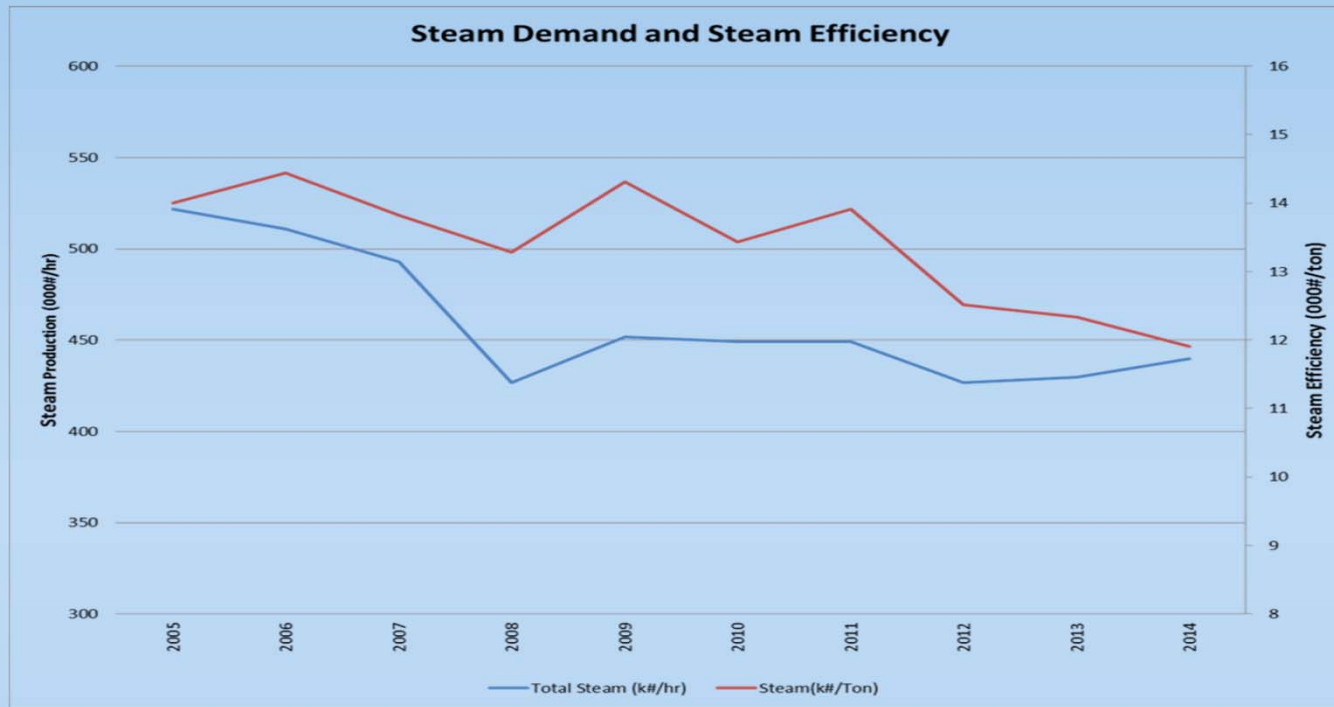
MILL WATER USE PER TON OF PAPER



PTPC CARBON FOOTPRINT



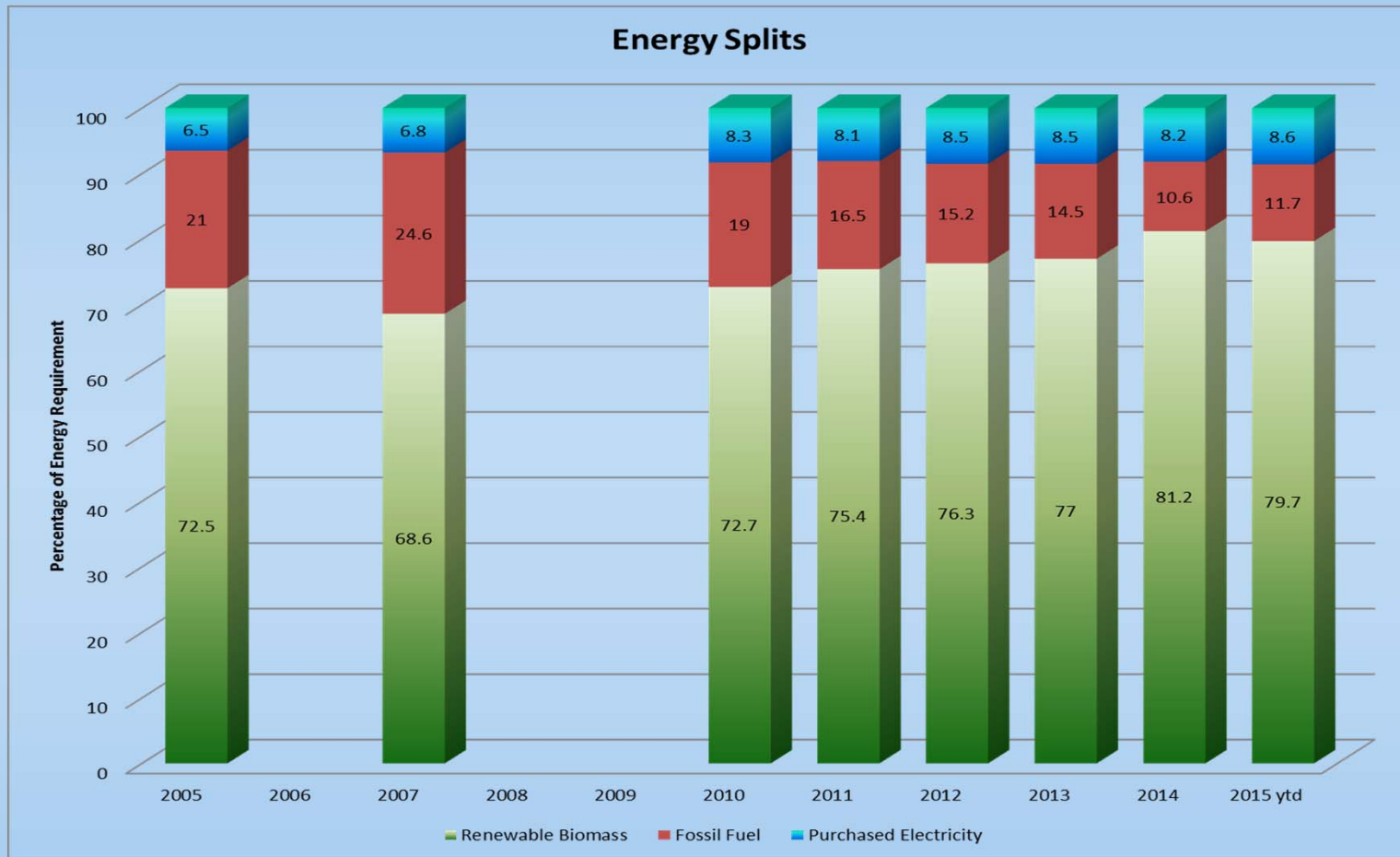
How we got here - efficiency



Improvements in process optimization and reliability have allowed us to reduce our steam requirement while maintaining production.

As a result our total steam demand (k#/hr) has decreased and our steam efficiency (k#/ton product) have both decreased, using less energy to make the same product.

How we got here – fossil fuel displacement



Improvements in process controls and boiler system reliability have allowed us to displace fossil fuel with increased residual, renewable biomass fuel.

Odor Study - First Phase

Evaluate Clean Condensate

- Under Cluster Rules PTPC implemented the “Clean Condensate Alternative”
 - Over collection of pulping condensates through “Hard Piping”
 - Treat condensates in a “Well operated biological treatment system”
 - Dredged ASB 1st run and upgraded aeration system – “Fine Bubble Diffusers”
- Consistently perform well for HAPS collection and destruction

Preliminary Goals

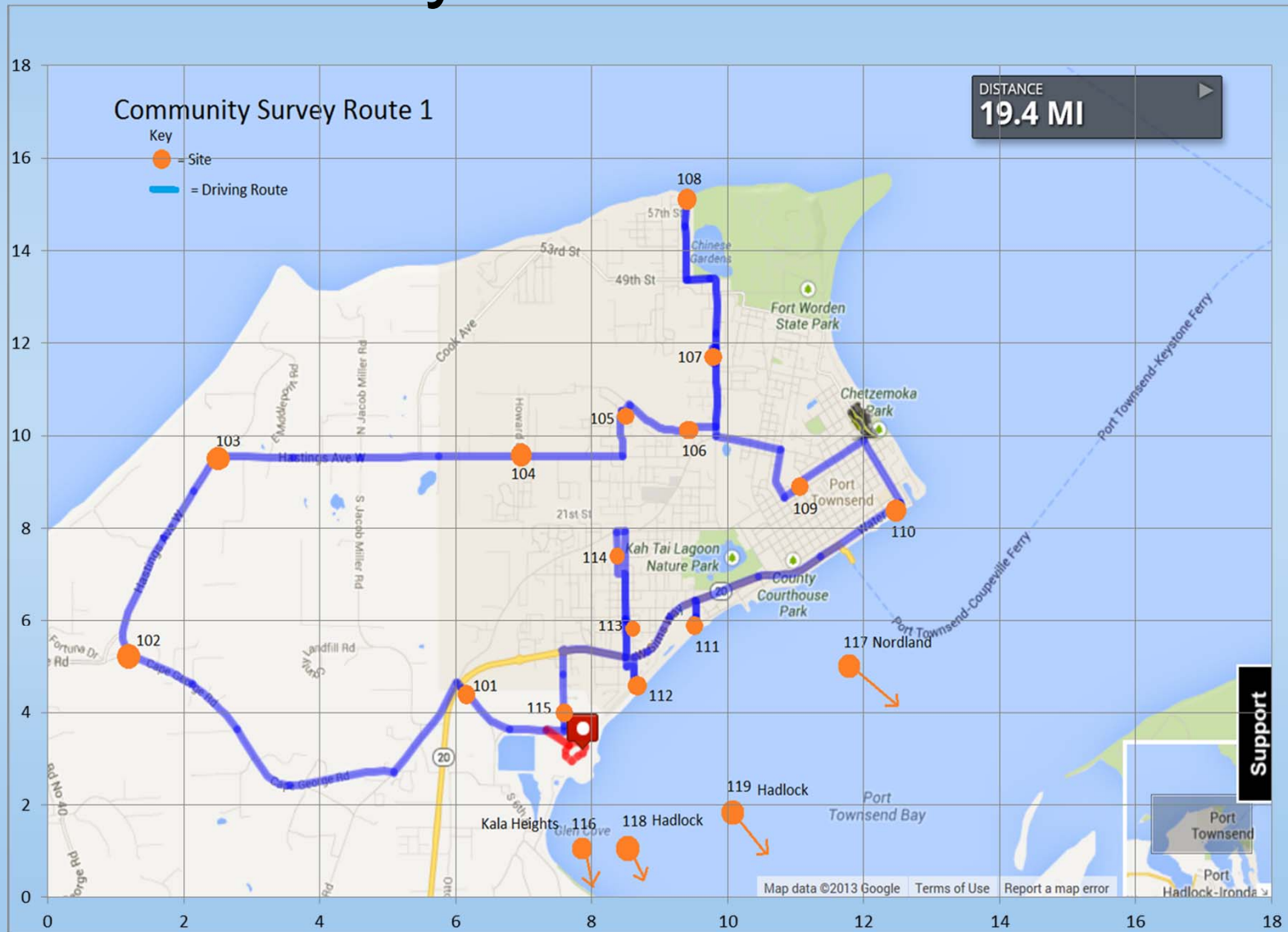
- For the Trial:
 - Reduce community odors
 - Develop Objective measurements
 - Develop profile and history of H₂S in the surrounding area
 - Learn how weather patterns influence odors
- For the Trial Review Panel:
 - Understand the concepts and background being used
 - Understand the work being done
 - Understand the data and assessments
 - Make recommendations for changes or ongoing work
 - Improve mill/community interaction

Objectively Measuring Odors

- Community odor surveys using the Jerome meter
 - Monday-Friday at different times of day and weather conditions.
- The Jerome meter measures levels of hydrogen sulfide (H_2S) from 3 (3 ppb) up to 10,000 ppb.
- The Jerome meter also detects other TRS compounds
 - (Doesn't indicate accurately for these compounds)
 - methyl mercaptan,
 - dimethyl sulfide and
 - dimethyl disulfide.



Community Observations



Questions and Recommendations

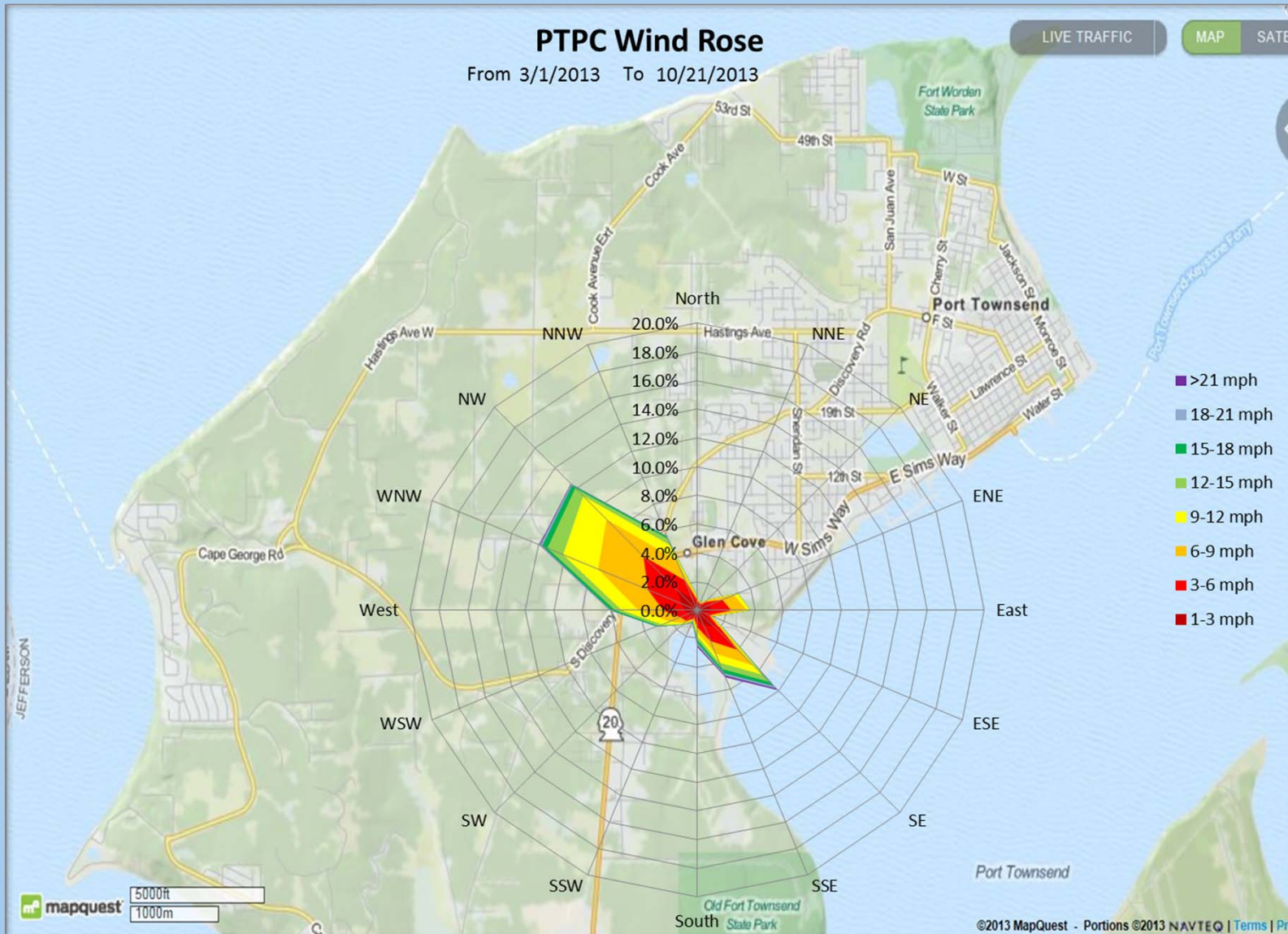
Questions:

- Does the Jerome read out only H₂S or does it read all reduced sulfides and report total as if H₂S?
- How does the meter physically perform the measurement?
- What is the relative effect of Mercaptan relative to H₂S?
- What possible effects could come from adding O₂?
 - o What compounds are produced?
 - o Is it worse if you get rid of odor but other things are still there?

Recommendations:

- Need REAL baseline data – about 50%
- Need data right off the pond for baseline and trial to see if a change there! – 5 during trial
- Wind rose for background
- Odor vectors hard to read.
- Validate chemicals produced by oxygenation (concern over worse things being formed)
- Test locations
 - o Add more to the South
 - o Jacob-Miller between landfill & Hastings
 - o Safeway parking
 - o Chimacum Elem School or Jeffco Lib
 - o HJ Carroll park
 - o Fort Townsend Park
 - o 6th St gate to landfill
 - o Discovery Rd directly West of mill
 - o Thomas & Hastings
- Cross reference Odor calls with testing – Huge undertaking!!!
- Compare with Topography
- Try to target testing with wind (then retracted as “wind doesn’t matter”)
- Reverse sample rotation (reduce systemic measurement error)
- More night data and “wee hours”
- Time series data:
 - o At highest hit locations
 - o Safeway parking
 - o Grant elem?
- Correlate with weather conditions (impact of wind and temperature changes?) – Huge undertaking
 - o Seasonality?
- Copies of other similar studies (group would like copies) – Very little info from Vendor!
 - o Best practices
 - o Lessons learned

Weather Impacts



Phase One Summary

- No statistical difference in H₂S measurements
- Odors were “Qualitatively” better
 - Many comments from neighbors and visitors
 - “Less Rancid” with oxygen
- H₂S is not a good indicator of “Odor”
- Move to more involved (time & \$) measurement techniques
 - Collect bag samples via boat
 - Lab analyses (7-14 day turn around)
 - Single sampling point

What is “BioChar”?

- “Poor mans” activated carbon
- Generated in the biomass boiler as “flyash”
- Large particles of charred wood escape the furnace before being fully burned
- Biomass (hog fuel) contains 40-50% moisture so some pore development occurs
- Collected in multi-clones and generally fed back to the boiler to be burned as fuel
- A local engineer/entrepreneur worked with a group to investigate its use for storm water treatment.
 - Not my research but in a “nutshell” -



Biochar for Stormwater Treatment at the Port of Port Townsend



Simple trial system to rinse
fines out of biochar



Francesco Tortorici (center) and
compatriots with downspout
tote at the Port