



# IOWA DEPARTMENT OF NATURAL RESOURCES

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LEADING IOWANS IN CARING FOR OUR NATURAL RESOURCES



## Lean Process & Events



Our Job is to Grow



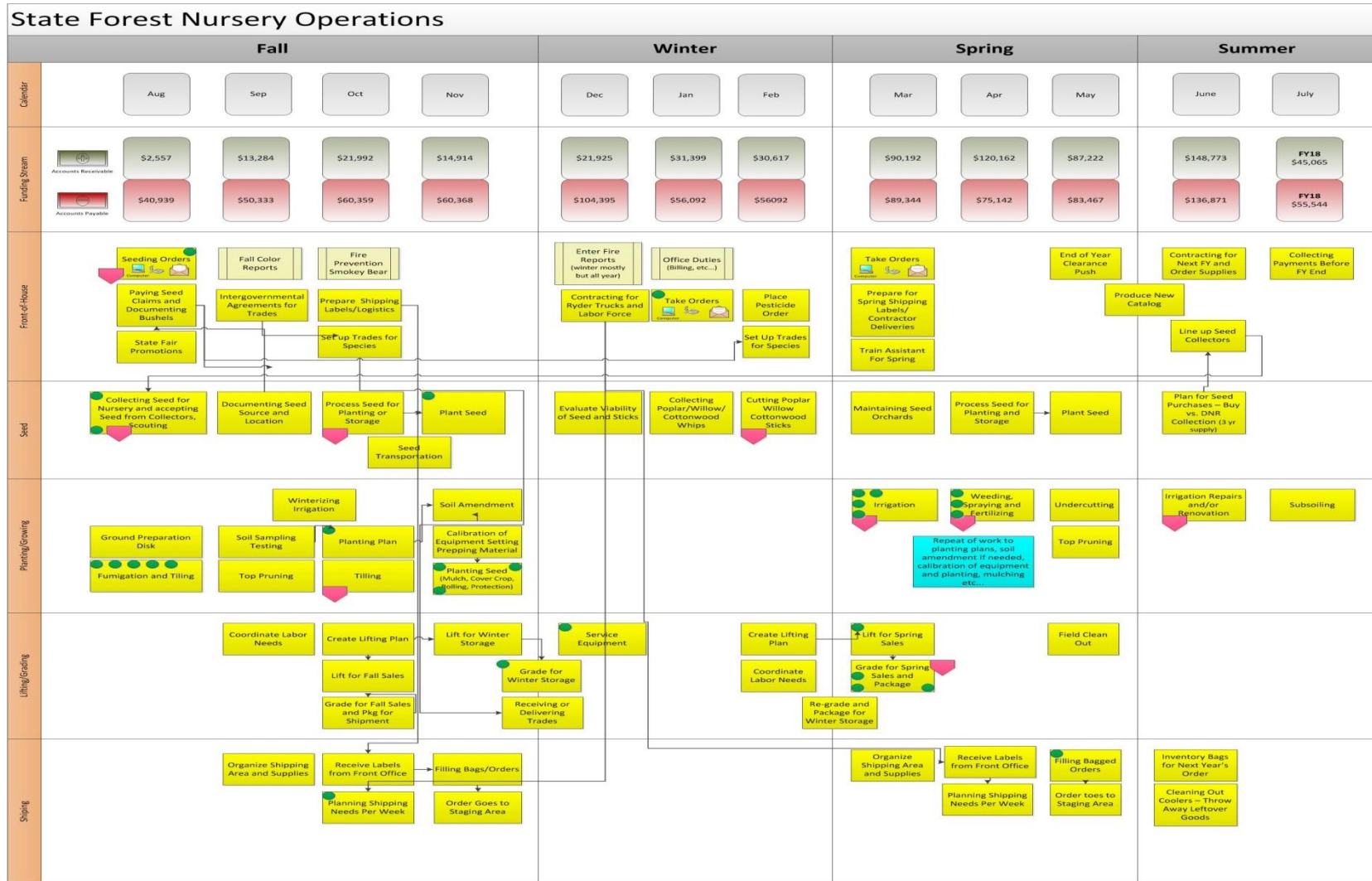
Trees for people



# Prepping for the Process

- Site Visits
  - Meetings with staff to understand broad overview of the entire operation
- Gemba Walk
  - Grabbed videos of various aspects of the process in action  
Fall of 2017
- Planning
  - Where do you start, how do we meet the needs of the customer and the agency, how does it roll out and what tools are needed

# Value Stream Map Event



Train and retrain All seasonals and contract workers

Transportation / Picking up seed and deliveries



# State Forest Nursery 5S Event

## SCOPE

*This event will use the 5S Methodology in order to set in order the maintenance buildings (new and old) for the purpose of creating and maintaining clean, orderly and high-performing workspaces using visual controls.*

## OBJECTIVES

1. Identify equipment and supplies that meet the needs and direction of nursery operations (equipment is in functioning condition or can get to functioning condition without excessive costs), set in order to ensure a more efficient and productive work space(s).
2. Set in order shop facilities to meet OSHA requirements and create visual controls and standards for ease of training new employees as well as for employee and supervisor monthly/quarterly/annual reporting.

# State Forest Nursery 5S Event

## GOALS

1. At the conclusion of the event, all staff will have standards for placement, use and OSHA compliance for all equipment and supplies located at the Nursery.
2. Standard work will be developed for equipment that is used by seasonal or contractual workers (example – list of daily activities to take care of with mowers before taking out of shop and upon return).
3. “Maps” and/or other visual markers will be used to document where equipment is located within each facility.
4. Equipment list updated with information about condition of equipment and potential life/replacement schedule for future planning purposes.
5. All equipment or materials Red Tagged will be placed on Gov Deals or destroyed within 1 month of the conclusion of the 5S.

# 5S – Sort, Set in Order, Shine, Standardize, Sustain & Safety

When in doubt throw it out

10 Staff worked on sorting materials and equipment from all buildings on day 1 (with the exception of the 2 attic spaces).

- 35 items (some multi-item lots) identified for posting on Gov Deals
- 2 dumpsters of broken or unusable goods and materials disposed of
- Old fertilizer, paints, stains and other chemicals separated to dispose of through Hazardous Waste Systems
- Numerous items identified for scrap steel
- 2 buildings identified for demolition





# East Garage Before



- 4 small rooms which was the old nursery office
- 4 garage bays
- 1 Attic (not yet sorted)



# East Garage After



## Use of space after sort

- 4 small rooms
  - Irrigation system spare parts and materials storage until the system is replaced.
  - Fire Program storage
  - 2 rooms with un-identified need at this time
- 4 Garage Bays
  - 2 bays for Fire Program use
  - 2 bays for equipment used by contract labor (3 mowers and 1 tractor)

# Woodshop & Garage Before



- 1 heated shop space with small storage room
- Middle area includes 3 garage bays
- 1 separated garage bay





# Woodshop & Garage After



## Use of space after sort

- Woodshop will be used for the seed work and equipment storage as well as cuttings and other small projects
- Middle bay will store large seed cleaning supplies and box inventory and park 2 vehicles
- End bay will be for moss and plastic bag storage and inventory



# North Garage Before



- 5 bays stored tractors, sprayers, a dozer, fork lift, frost fabric and some nursery supplies (wire, hoops, etc...)
- 1 bay stored a tractor, fertilizer spreader and fertilizer some of which was old and unusable
- Buckets and implements stored inside or outside due to space



# North Garage After



## Use of space after sort

- 5 bays will be used to store tractors
- 1 bay will be used for the tractor, fertilizer spreader and fertilizer
- To the east of the garage old pipe from the old irrigation system is stored. It is no longer needed and once removed this area will be rocked and sprayers and implements will be organized in this space. Equipment now stored down in the Moss Shed away from primary operational space will be brought up to this space.

# New Garage After



## Use of space after sort

- Materials for the nursery used infrequently are stored in the loft
- Frost fabric laying on the floor in the image will be hung from the loft to add storage underneath
- Lifters, planters, mowers, tiller and some implements stored inside
- Large and newer tractors stored inside
- Plow truck will be rotated seasonally with the other truck. When not inside it will be parked between buildings with trailers.



# State Forest Nursery Grading Room Kaizen Event

## SCOPE

*This event will look at the grading room process from the time baskets of tree seedlings are brought from the coolers to the time baskets containing sorted and bagged trees are moved back to the coolers.*

## OBJECTIVES

1. Assess and evaluate the current process for the grading room to determine areas of improvement to increase efficiency and production.
2. Identify equipment and supplies that are critical to the process in the grading room, set in order to ensure a more efficient and productive work space(s).
3. Create visual controls and standards for ease of training new employees and contract workers for effective communication and productivity and to decrease time spent by DNR full-time staff in the room during the grading process.



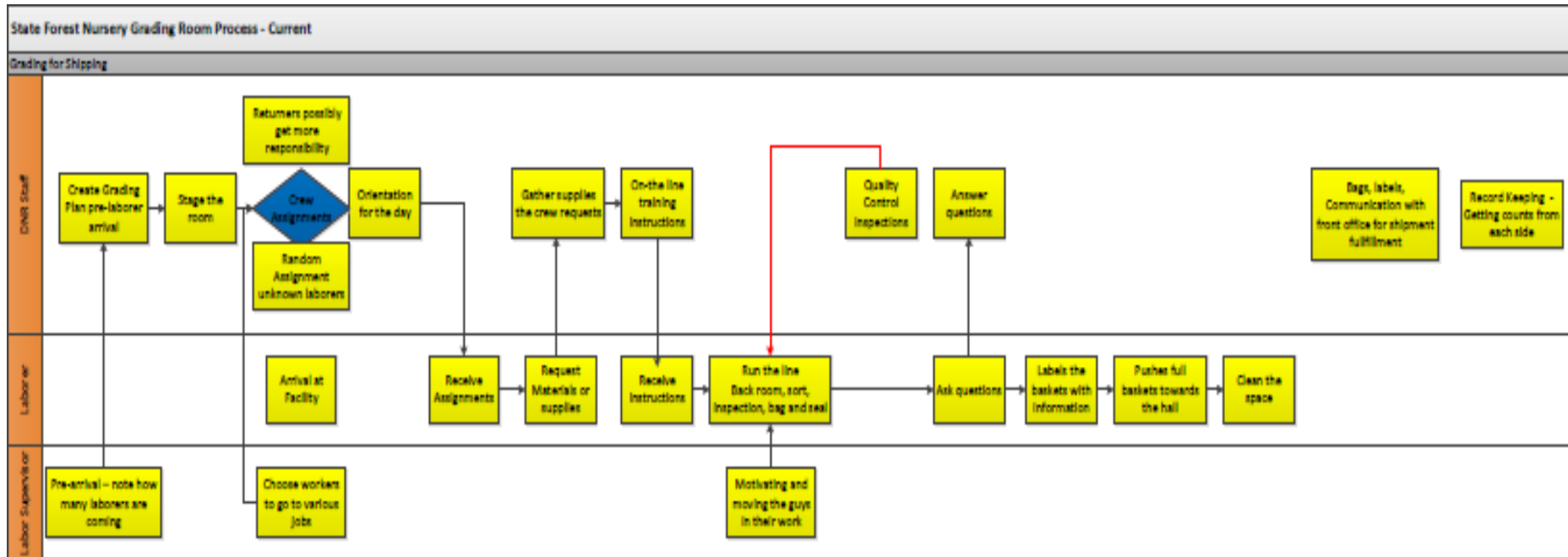
# State Forest Nursery Grading Room Kaizen Event

## GOALS

1. Standard work will be developed for each area of the process in the grading room. Standard work will be created in such a way that it can be shared/trained with contract workers and/or their supervisors prior to arriving at the facility.
2. Visual management tools will be developed and installed to document where equipment is located within the room, steps of the process, productivity of the day, etc... in order to increase productivity and work flow.
3. The Grading Room will be set in order with standard procedures and placement of materials and equipment for beginning of day and end of day posted and followed for seasonals/contract workers and for full-time staff for the purpose of creating and maintaining clean, orderly and high-performing workspaces.

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# Grading Room Process - Before



Note: During grading for storage there are small differences from the process outlined above. The staging of the room and the materials needed are different. The line is run identical but the product is not bagged. The bundles of 25 are tied with twine and then placed in baskets with moss. Bundles are counted and baskets are labeled the same as the process described above.

# Grading Room Before

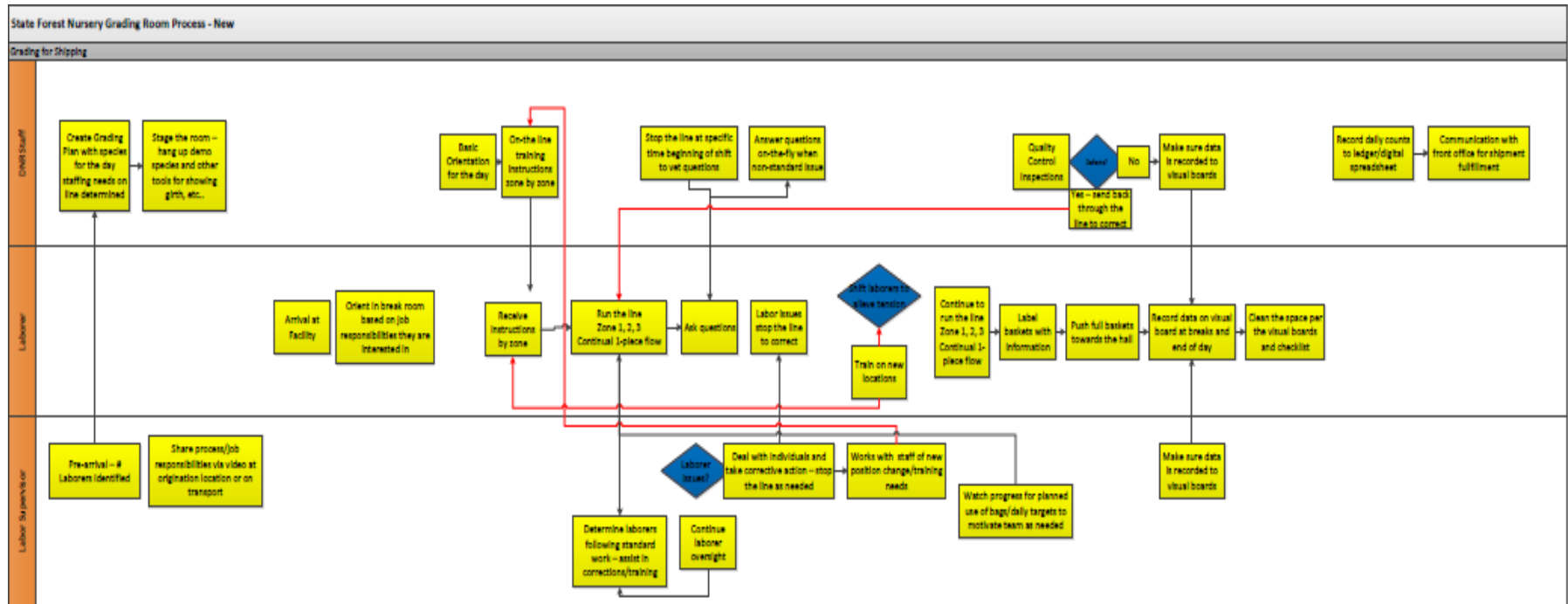


# Grading Room Back Room Before



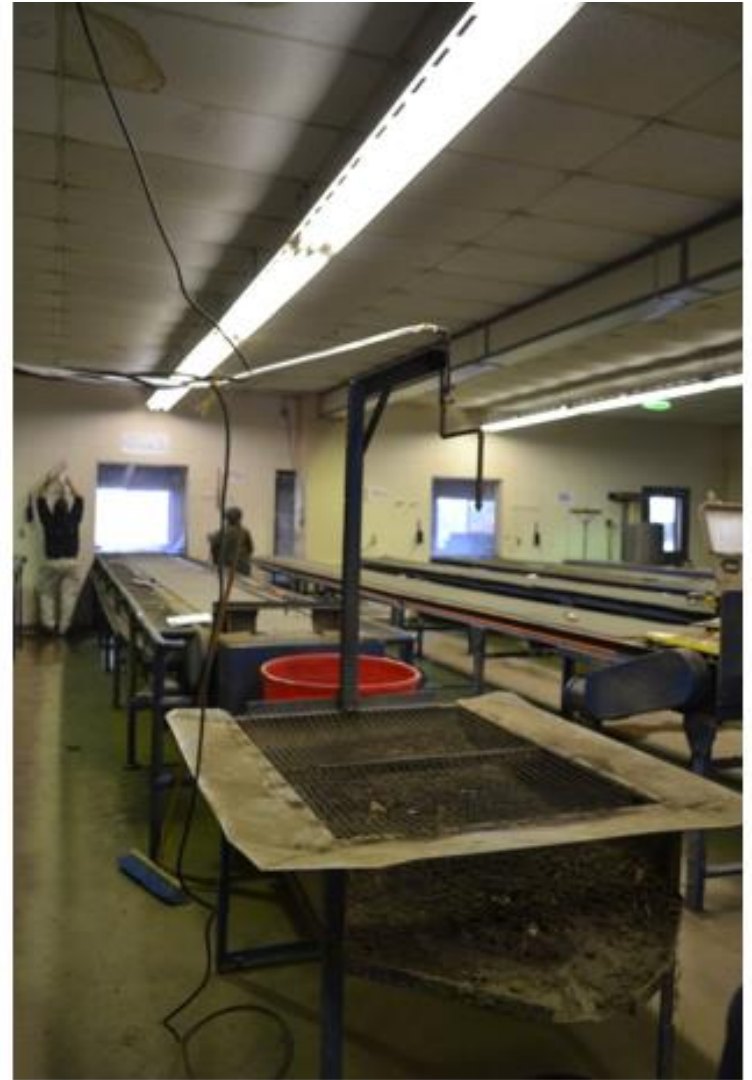


# Grading Room Process After



Note: During grading for storage there are small differences from the process outlined above. The staging of the room and the materials needed are different. The line is run identical but the product is not bagged. The bundles of 25 are tied with twine and then placed in baskets with moss. Bundles are counted and baskets are labeled the same as the process described above.

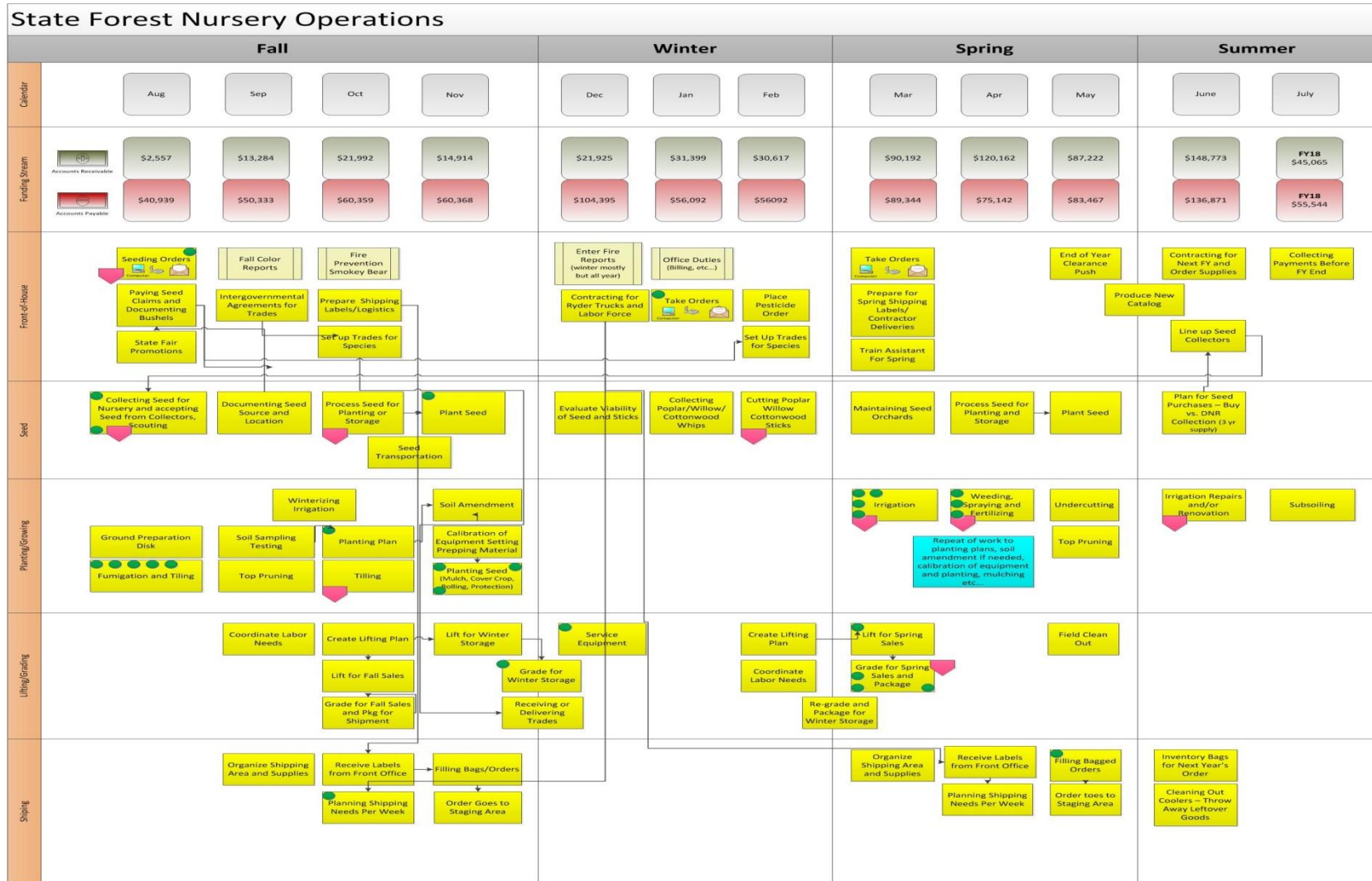
# Grading Room During Transition



# Grading Room During Transition



# Value Stream Map Event



Train and retrain All seasonals and contract workers

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