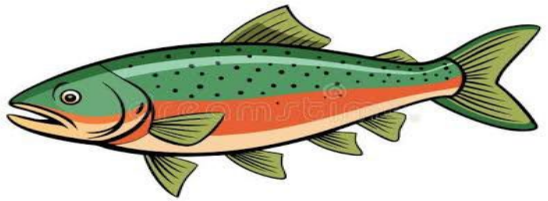


ODFW The Dalles Fish Screens and Passage

Adaptive Management – Time savings Strategies





Issues we face for projects

- Smaller Crew Size

2 Technician Construction Crew

2 Technician Maintenance Crew

1 Senior Technician Split Construction/ Maintenance

- Shorter in water work periods

3 main IWWP periods

15-mile (Local) IWWP (3.5 months) July 15th - October 31st

Willamette IWWP (1.5-2.5 Months) July 15th – August 31st or September 30th depending on tributary

Coastal IWWP (1.5 Months) July 15th -August 31st

How do we offset these issues

- More maintenance longevity friendly implements
- In Shop Fabrication (Pre-Fab Screens/ Stainless Ladders)
- Less concrete form work
- Upgrading machinery





Components to Reduce maintenance

- Longevity of Parts
- Run longer require less maintenance and replacement
- Screens run better
- More cost in the beginning less overall
- Parts include
- Stainless steel screens and cradles, UHMW bearings, Brush side seals
- Why is this beneficial
- Less strain on the maintenance crew allows us to be efficient and stay ahead of maintenance concerns



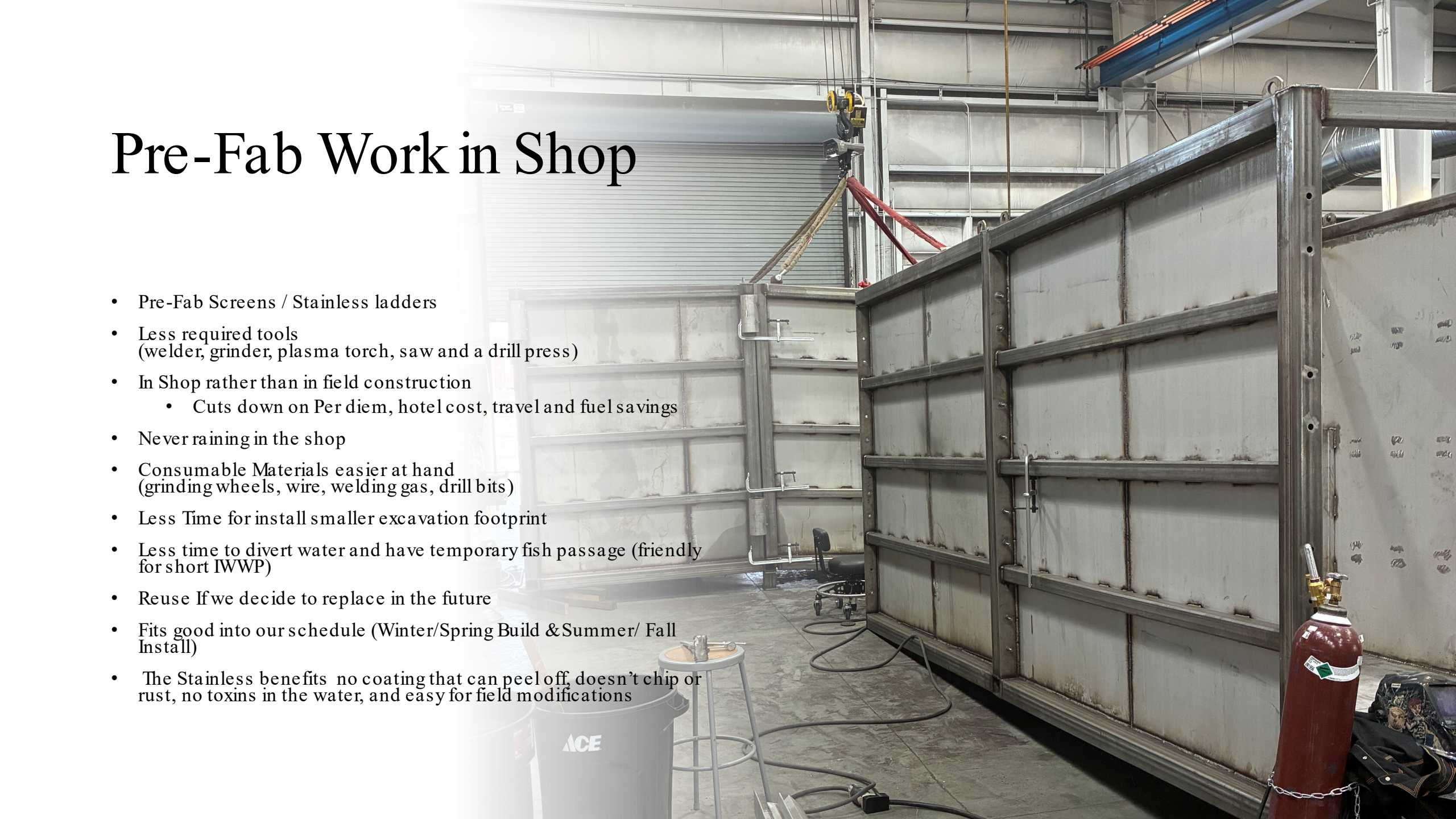


- Brushes quick to slide in and out
- UHMW Bearings can last 25 years
- Stainless steel drums and cradles
  Aluminum paddles don't rust out
  in corrosive/ salt water





Pre-Fab Work in Shop



- Pre-Fab Screens / Stainless ladders
- Less required tools
  (welder, grinder, plasma torch, saw and a drill press)
- In Shop rather than in field construction
  - Cuts down on Per diem, hotel cost, travel and fuel savings
- Never raining in the shop
- Consumable Materials easier at hand
  (grinding wheels, wire, welding gas, drill bits)
- Less Time for install smaller excavation footprint
- Less time to divert water and have temporary fish passage (friendly for short IWWP)
- Reuse If we decide to replace in the future
- Fits good into our schedule (Winter/Spring Build & Summer/ Fall Install)
- The Stainless benefits no coating that can peel off, doesn't chip or rust, no toxins in the water, and easy for field modifications

Cost breakdown for working out-of-town

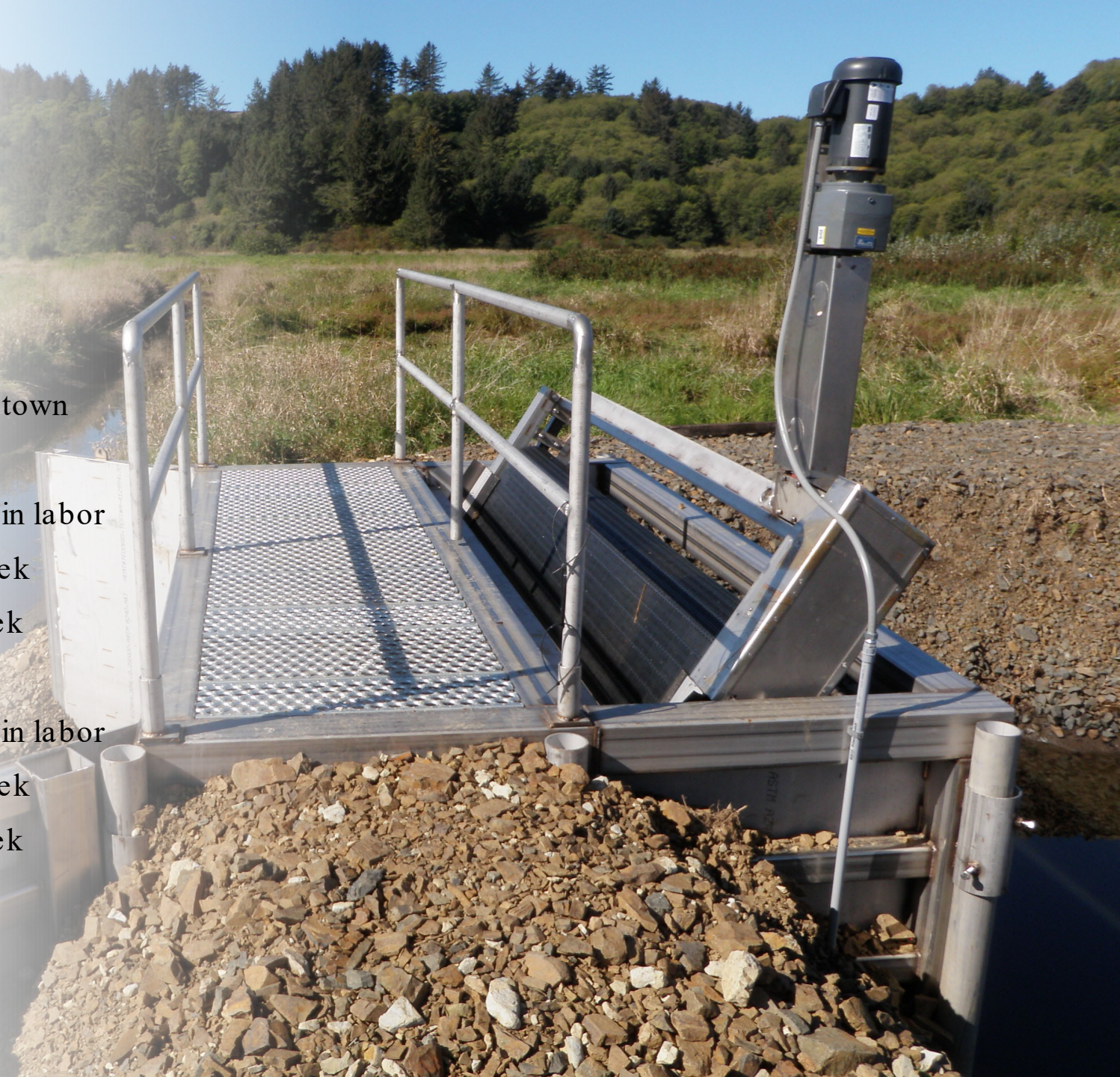
- $15,000 cost for a week of onsite work out of town

North Coast (Seaside)

- Crew of (5) $10,000 a week in labor
- Hotels (5) $2,115 for a week
- Per diem (5) $1,720 for a week

Standard Rate

- Crew of (5) $10,000 a week in labor
- Hotels (5) $1,650 for a week
- Per diem (5) $1,360 for a week



Going away from Concrete structures

- Multiple factors
- Time
  - Much longer duration for putting in concrete structures
  - Must build on site
    - Time to get there and back, more long days, periderm, hotels, travel
    - Limited in water work leads to extensions, more permits
    - Longer to build
- Bad weather conditions can delay construction work
- More components
  - Re-bar, wire, lumber, form-ply, gravel, fasteners , tools, fuel, equipment, generators, power tools, welders, dump trucks excavators
- Larger impact and footprint
  - Concrete is generally poured in place
    - requires diverting water/ passage longer
    - Larger hole for excavation (greater disturbance more cultural inspections, spoils collection)
- Concrete doesn't last as long
  - Even in good conditions (cracks , breaks, rock pockets, hot/ cold elements, human element
- Can't reuse if you decide to replace
  - Break out, crush up, haul away and generally pay to dispose of





Cost comparison Stainless vs Concrete Materials for current fish ladder project

- Stainless Steel

  $ 250,000 for the stainless steel

- Concrete

  $45,000 for the concrete Total in base material ~$100,000~

  $12,500 for rebar
  $17,500 for form ply
  $6,000 for 2x6x8 lumber

  $10,000 for Concrete pump

  $ 7,000 for gravel

- Our crew of 5 cost ~$45,000~ per month just in wages

  Even though concrete material is ~40%~ of the price. Where we save money is the time aspect for travel days, periderm, hotel stays, time to order materials, cut build and install forms , strip forms, larger excavation time, time grade with gravel for foundation, and pour and finish concrete. As compared to cutting and welding steel and digging and excavation

Upgrading Machinery

- Work Smarter not Harder
- More efficient
- Create custom parts in minutes not hours
- Lift and move material easier with less manpower
- More capabilities to make custom precision components
- Overall less time more efficiency









Questions?

