



Task Planning System

Lessons Learned from portfolio-wide implementation of LPS®
in Electrical Transmission

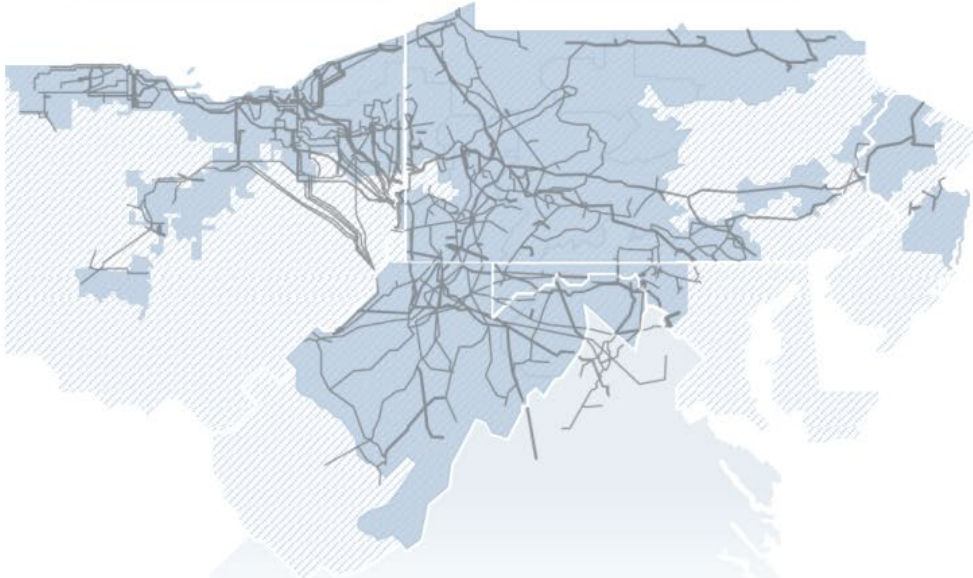
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About FirstEnergy Transmission

24,000+
Tx Line Miles

1,300+
Tx Stations



10.2-11.7%
Allowed ROEs

~\$12B
Rate Base (2025F)

Energizing The Future

Focused on investments that improve **grid reliability**, **grid resiliency**, and support a **carbon neutral future**

A premium business with a continued long-term pipeline of transmission investment opportunities

Continued Growth

10%+
Annual Rate
Base Growth
(2023-2025)

\$8B
Investment Plan
(2021-2025)

100%
FERC-regulated,
forward-looking
rates

Investor FactBook • Published February 13, 2023

Driven by enhancing customer value, our continuous improvement efforts focused on reducing portfolio churn

Complicated portfolio operations with inherent exposure to multitude of uncertainties and unforeseen conditions

- 1000+ active projects at any given time
- Large geographical footprint with sites located in challenging terrain and/or difficult access
- Lengthy Right of Way and permitting process
- Labor resource share duty for storm response
- Layered budgeting processes (project budgeting, annual budgeting, rate cases, operating companies, etc.)
- Challenging outage scheduling environment
- Supply chain complexity



Residual uncertainties create constant movement in portfolio plan (churn). Higher churn impact ability to pre-plan. Low churn increase effectiveness and reliability of our project and portfolio plans

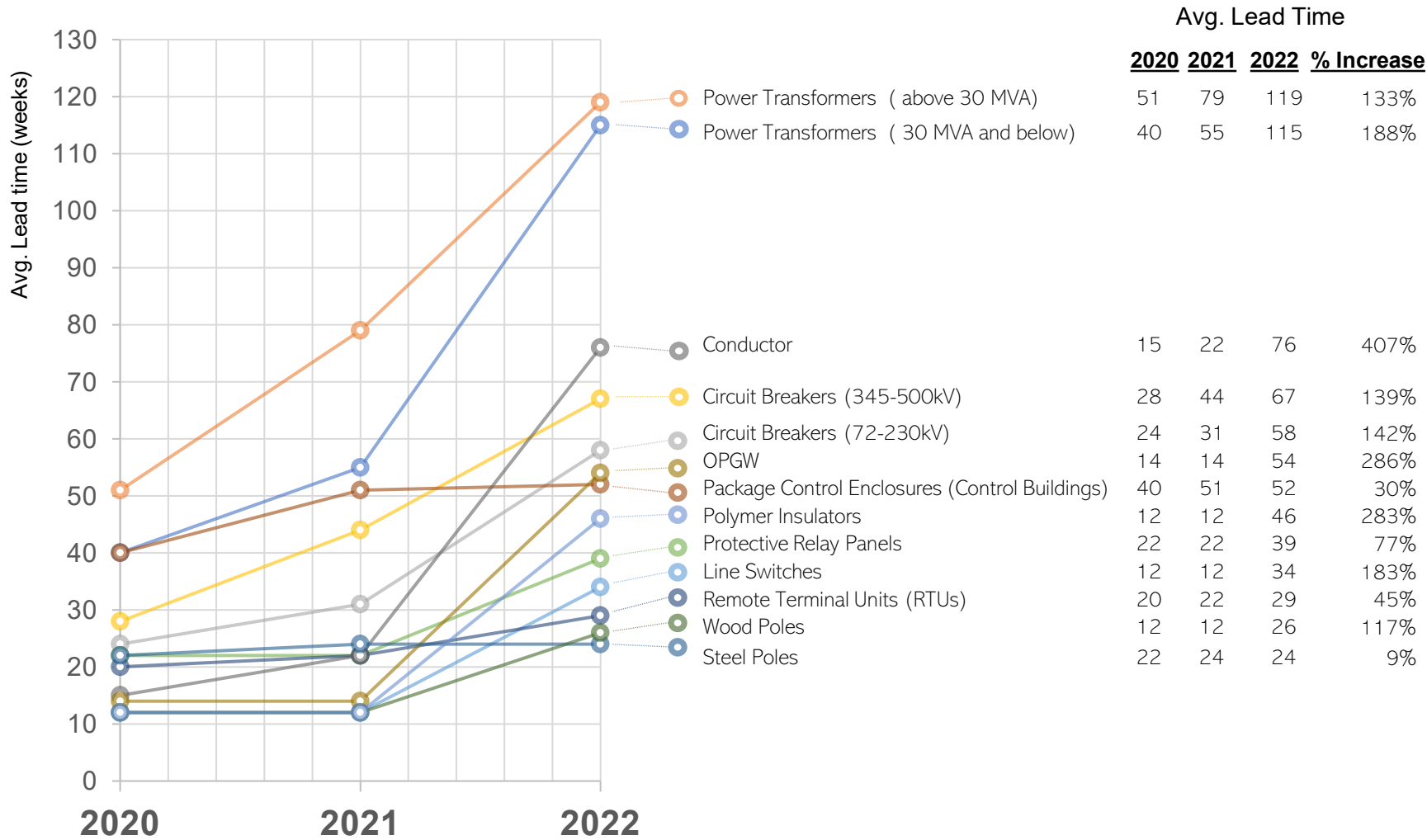
- Project Churn Index (PCI™) is a measure of how actual project monthly cashflow deviated from annual plan forecasted cashflow. PCI is aggregated at the portfolio level to measure the overall portfolio churn.



Reducing portfolio churn enhances customer value through:

- Longer planning environment
- Optimize resource planning and utilization
- Enhance material ordering and delivery
- Increase resiliency of portfolio
- Increases agility and accelerates recovering from unforeseen conditions (e.g. supply chain disruption)

We increased our planning horizon to absorb impacts from supply chain disruptions, outage constraints, and longer permitting and ROW cycles



Portfolio churn was controlled and reduced through enhancements to four key focus areas

01

PROJECT DEVELOPMENT

- Focus on identifying risks; mitigating risks and planning for residual risks.
- Initial Engineering, Right of Way, Long Lead Items, Outage identification and scheduling, Permitting, and Resource Planning

02

ESTIMATING

- Progressive estimate classes (Conceptual/Planning; Function/Budgetary; and Detailed/Construction)
- Quantification of risks (contingencies, escalation, allowances)
- Mapping to Schedule of Values
- Implementation of new estimating system



03

SCHEDULE

- Enhanced tracking of schedule during early project lifecycle stages
- Enhancements to CPM schedules
- Implementation of LPS (Task Planning) to enhance schedule reliability

04

FORECASTING

- Implementation of new cost control and forecasting systems
- Linking estimates, actual cost, and schedule through standardized schedule of value
- Implementation of Earned Value to support forecasting prediction

Focus areas and initiatives changed every year as part of a strategic planning process focusing on continuous improvement and advancing strategic priorities

LPS® was identified as mechanism that buffers construction operations from upstream risks and uncertainties and enhances flow of construction operations



Examples of upstream risks and uncertainties

- Right of Way disruptions
- Long Lead Items delays
- Outage congestion and scheduling delays
- Permitting delays
- Resources pulled into storm response

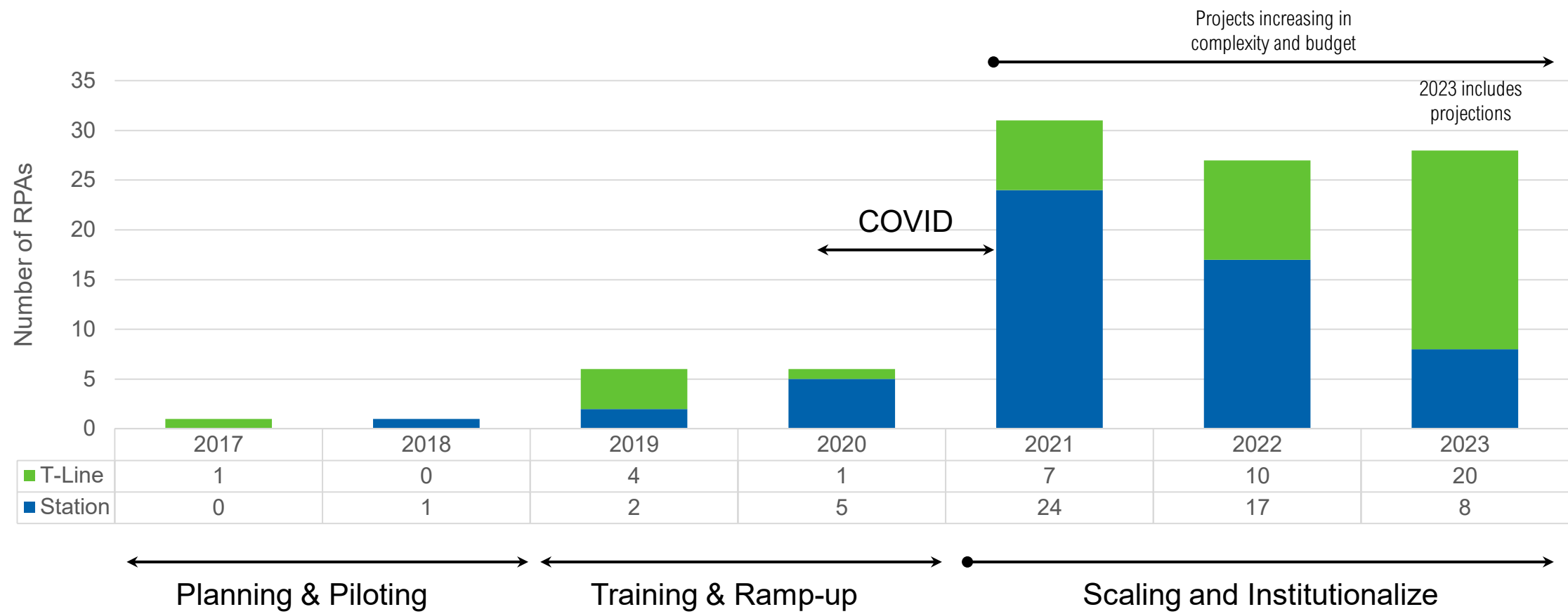
Make Ready Zone

- Cost of risk mitigation is highest
- Impact of risk is highest
- Outage Constraints
- Out of control events (storm response, weather impact, supply chain delays, etc.)
- In-Service Date (ISD) hard constraints

Ensure work is ready before release to construction

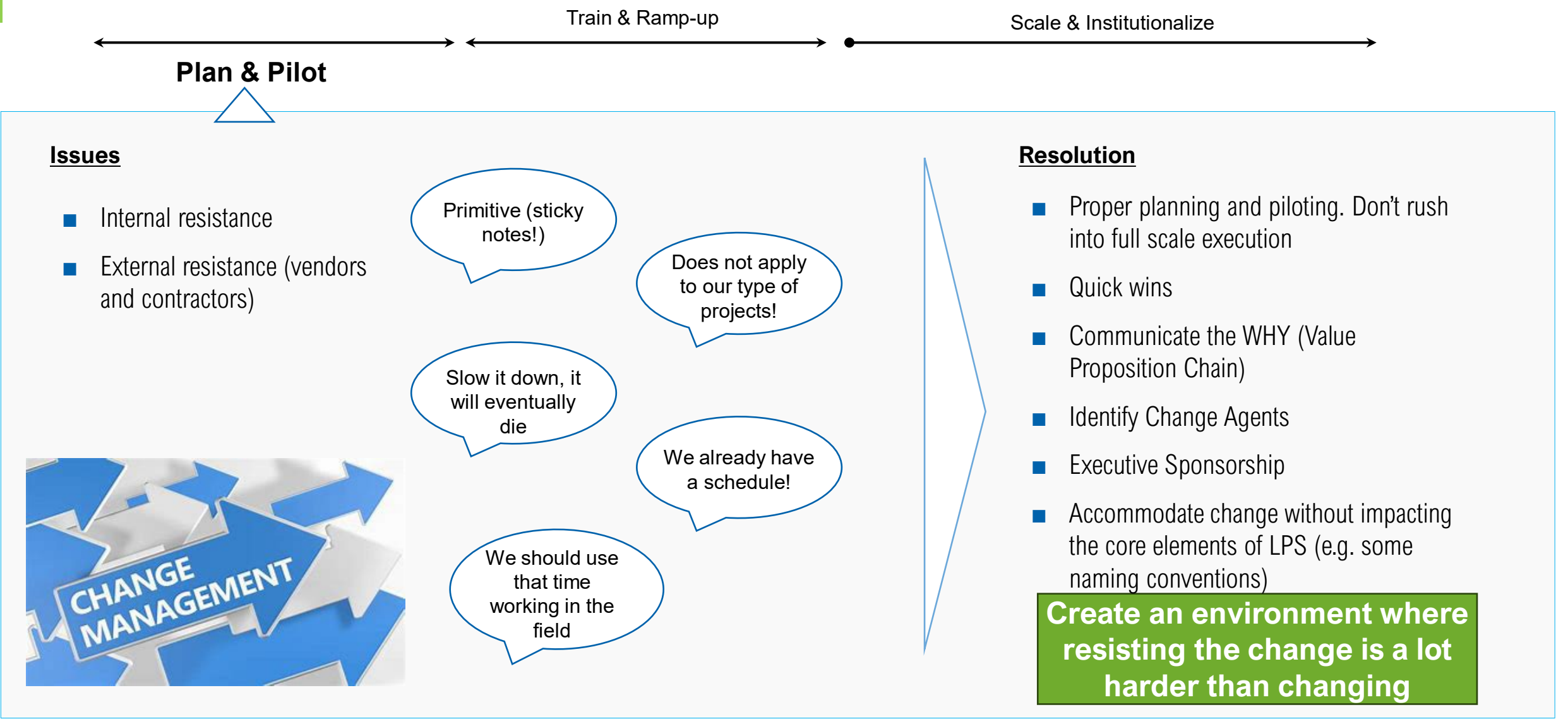
ISD

The implementation had three distinct phases: planning & piloting, training and ramp-up, and finally scaling and institutionalizing within our culture

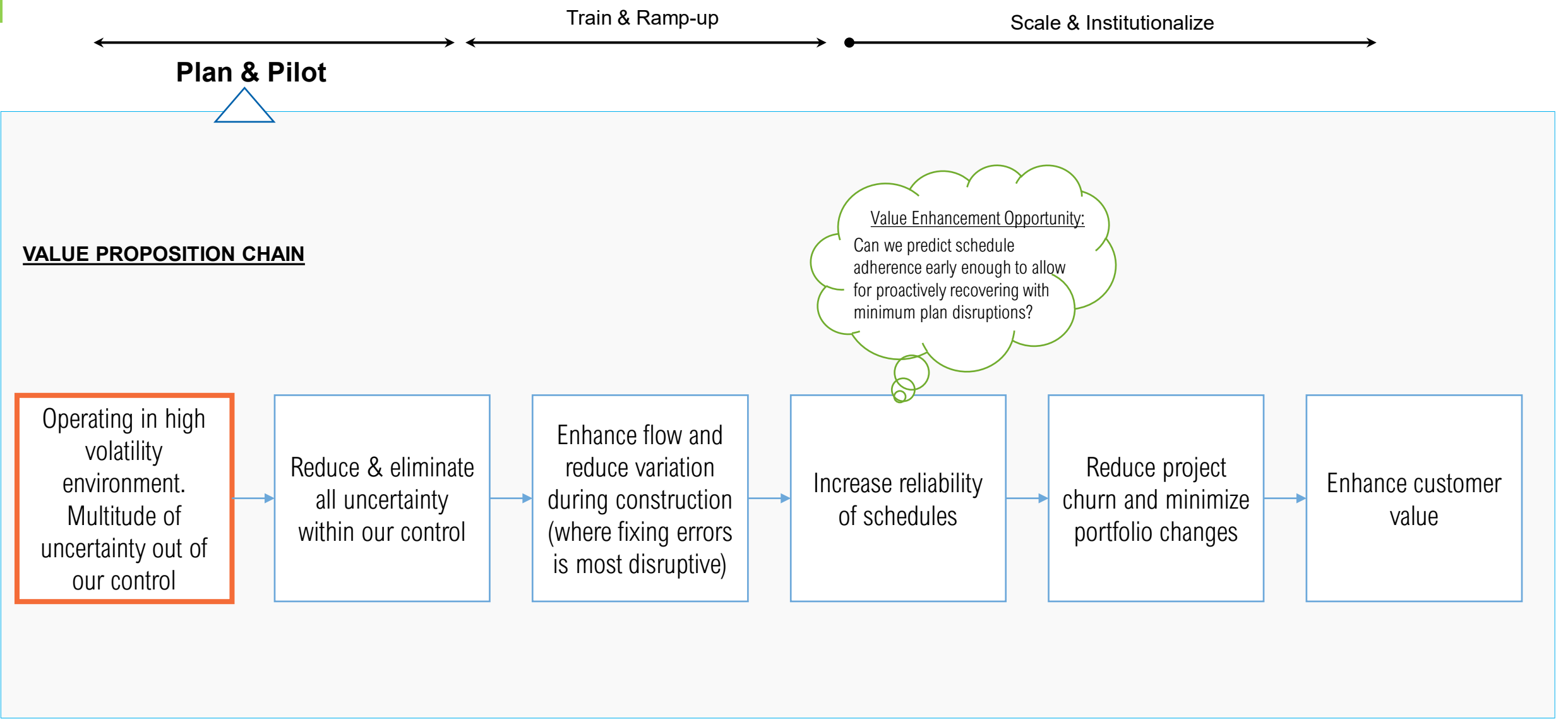


*Request for Project Approvals (RPA) are defined in terms of planning requirements and usually include multiple projects with different contractors and scope.

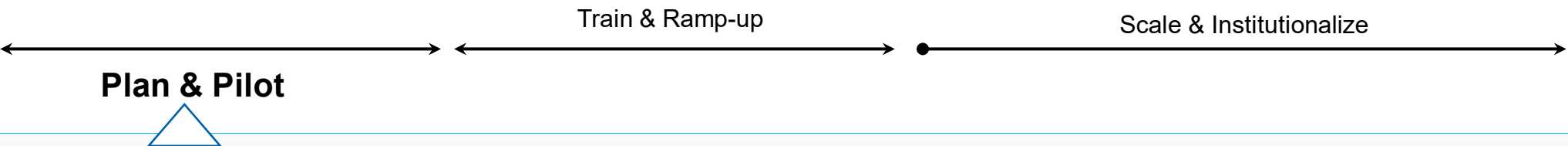
Lesson Learned #1: Don't underestimate change management!



Lesson Learned #2: Map your value proposition (the WHY)

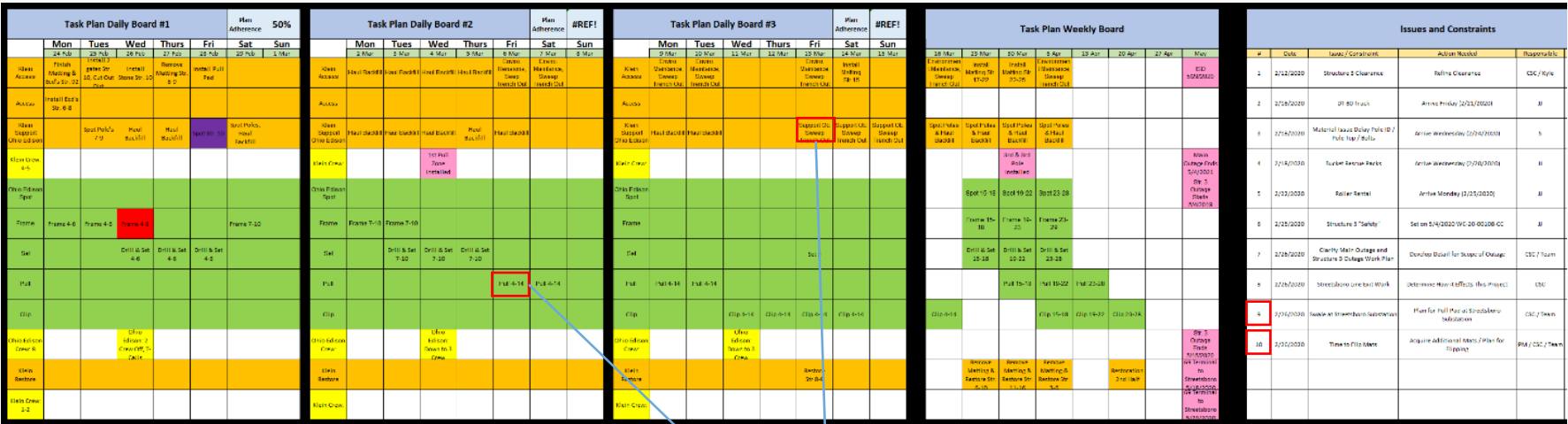


Lesson Learned #3: Enhance the value proposition – e.g. Unconstrained Days



The unconstrained days metric provides an insight into the planning horizon available in the field before becoming dependent on any pending items. Unconstrained days are calculated using the deliverables generated at the end of each weekly task planning session. It is measured as the number of consecutive days without a constrained task on the weekly planning boards.

Previous week Current week 1 week out 2 weeks out Lookahead plan Issues & constraints



Closed issues

Open issues

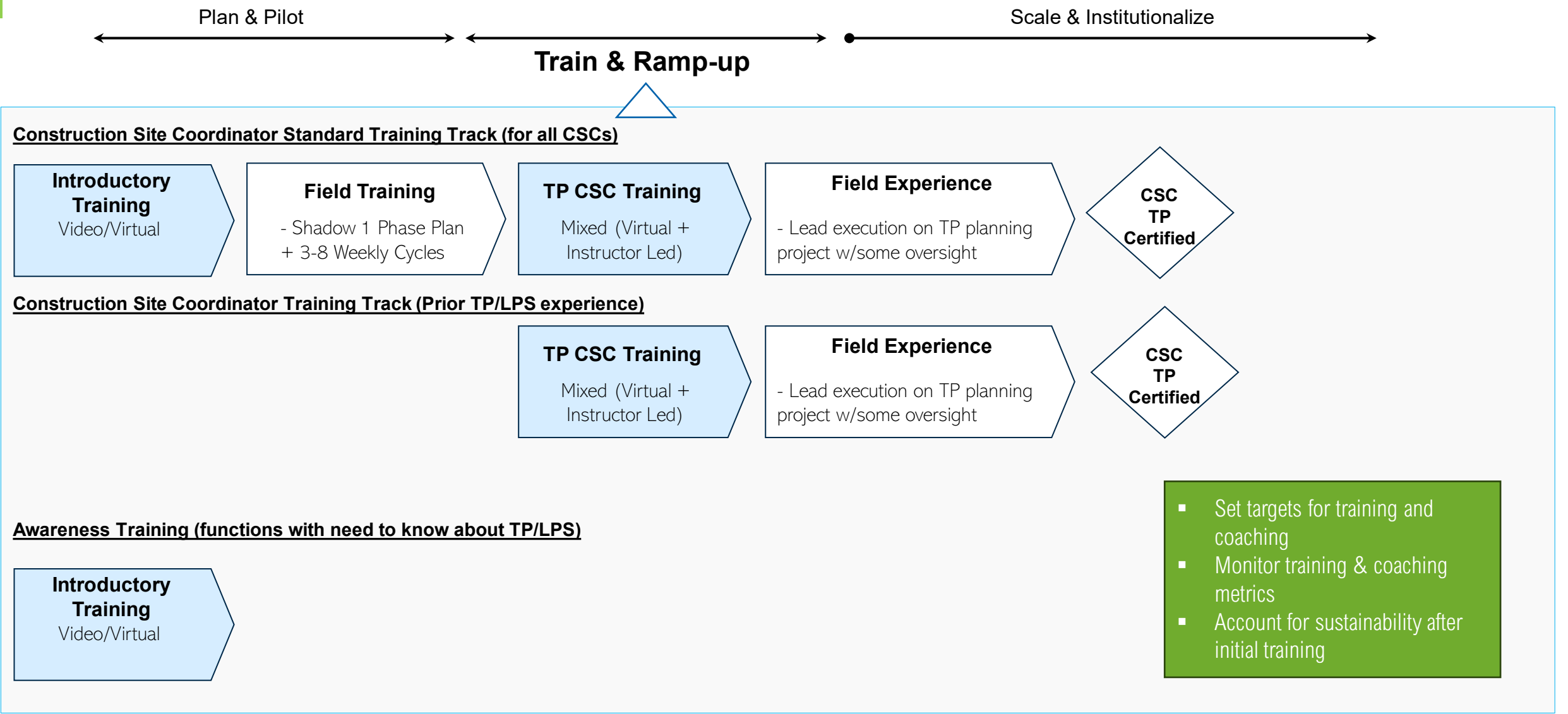
Constraints

Unconstrained days = 7 (in current week) + 4 (in next week) = 11 (total)

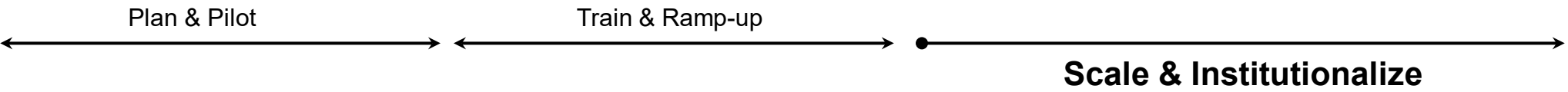
Constrained tasks i.e. these tasks will become constrained on the 12th and 19th days respectively

i.e. the project team has 11 days to resolve the problem before it constraints the task

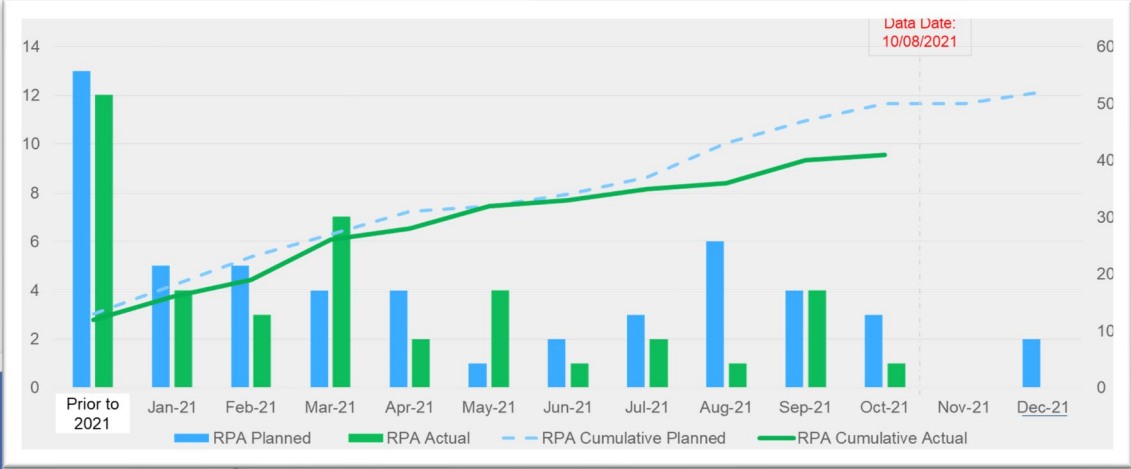
Lesson Learned #4: Implement robust training & coaching plan



Lesson Learned #5: Keep the momentum until it is part of the culture



1 Develop A3 plan:
Issues to address, Applies to, Who is Consulted, Problem Analysis, Solution Design, Implementation, Communication, Metrics & Results, Sustainability, and Documentation



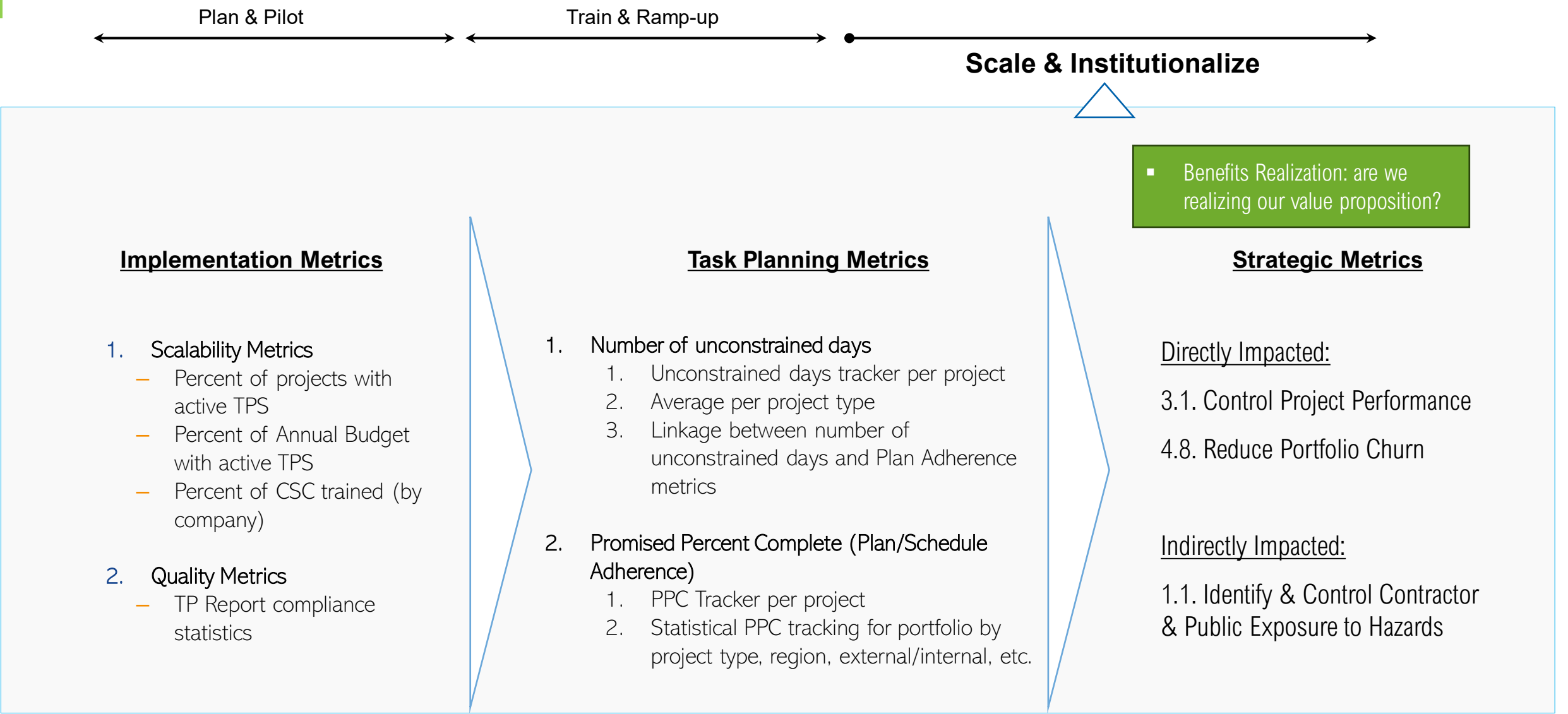
2 Track & Monitor Progress:

- Detailed schedule reviewed monthly as part of Strategic Management Office
- Implementation Metrics
 - # of new Task Planning project starts
 - # and % of CSC trained
 - Quality metrics

3 Keep momentum until its part of the culture

- Examples for signs of mindset change:
 - Vendor asks permission to use same process outside of First Energy
 - Task Planning teams organically enhancing system
 - CSC moved from projects required to use TP to projects not required to use TP and voluntarily instituted TP
 - Unconstrained days and other metrics part of the normal jargon of project update meeting

Lesson Learned #6: Measure



Conclusions & Future Enhancements

- **Unconstrained number of days is a good predictor of Plan Adherence (PPC)**
- **Plan Adherence (PPC) metric is a good predictor of Short-Term Planning Indicator (measure of forecast accuracy)**
- **Task Planning projects statistically have less project churn and improved overall project performance**
- **Current Planned Enhancements:**
 - Incorporation of Safety Huddles in task planning weekly meeting
 - Linking Task Planning with CPM schedules

Our three-tiered approach of strategic alignment, capability development, and execution excellence enables organizations to translate strategy into long-term sustainable, and measurable results.

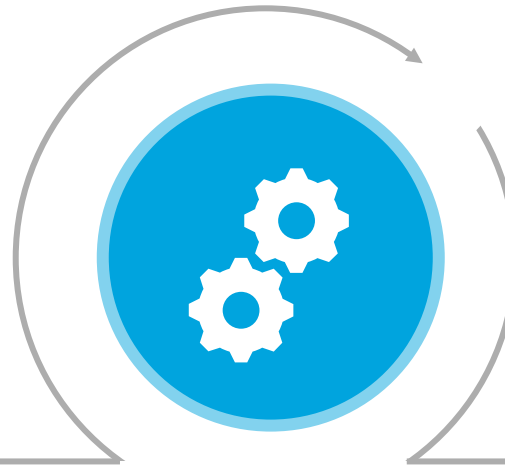
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STRATEGY



- Strategic Alignment
- Strategy Management Office
- Capital Project Prioritization Systems

CAPABILITY



- Capability Assessments
- Process Development & Implementation (PLMP)
- Organization Design
- Technology Selection, Integration Architecture, and Implementation
- Continuous Improvement
- Change Management
- Performance Management
- Data Governance & Analytics

EXECUTION



- Project Controls (Scheduling, Cost Management, Earned Value, Status Reporting)
- Project Management Coordination & Support
- Project Cost Estimating
- Lean Construction (Task Planning)
- Communications & Training Development