

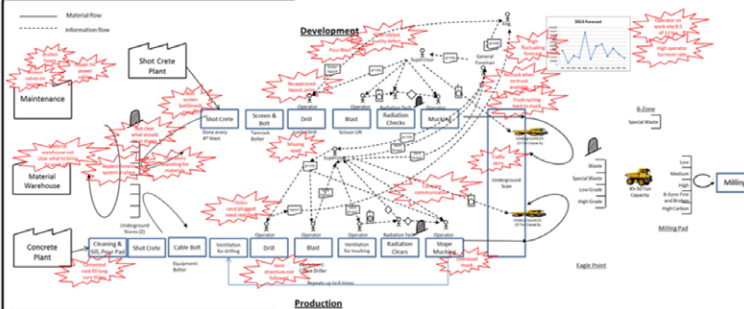


# Mine Performance Optimization



## Client – Value Stream Map

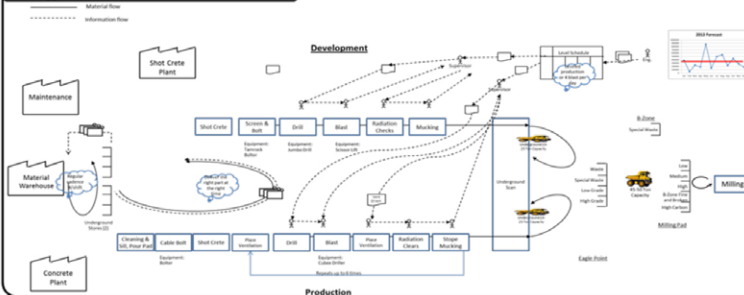
### Current Condition



### Highlighted Problems

- Employee turnover
- Long lead times
- Complex communications
- Missing Material from store
- Searching for material
- Complex material movement – trucks idle or not available

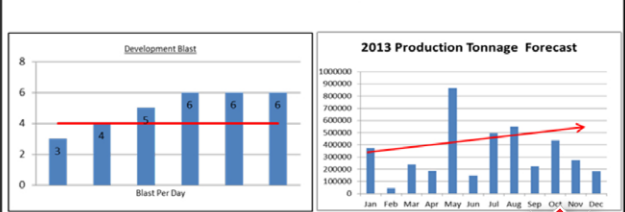
### Target Condition



### Strategy

- Select model area – 400X
- Established standardized work for each process to reduce lead-time
  - Drilling – Blasting – Mucking – Drivers
- Establish Development Planning criteria to utilize equipment efficiently
- Create Visual Control Boards to reflect current conditions. Are we on pace?

### Key Performance Indicators



### Benefits

By decreasing lead-time and establishing standardized work we can increase the number of blast per day to reach production stopes. Through efficient blasting, operators can obtain performance bonus' on consistent basis. Also, reaching the production stopes in less time will allow site to pull value-added material on-time or ahead of forecasted schedule.

**\$15MM Annual Improvement**

### Schedule

	March	April	May	June	July	August	Sept	October
STW		Implementation				Coaching to support on own		
Production Planning		Implementation				Coaching to support on own		
Visual management			Implementation			Coaching to support on own		
Change Management				Implementation		Coaching to support on own		
LCE On-site Support	3/25-3/29	4/22-4/26		6/10-6/14	7/15-7/19	8/12-8/16		9/23-9/27



## Mine Performance Optimization (MPO) Key Points:

- Thoroughly maps your process/operation value stream (or portions of it)
- Identifies and addresses opportunities that:
  - Reduce risks to the organization
  - Eliminate non-value-added work
  - Improve productivity/utilization of your people and physical assets
  - Improve reliability of poorly performing assets
- Engages cross-functional teams to design/develop their solutions and own the results
- Creates ways to measure and sustain success!

### About Life Cycle Engineering:

Life Cycle Engineering (LCE) provides consulting, services and education. Our team specializes in providing client-specific solutions that help organizations improve their operating performance. LCE's 30 years of field experience has contributed greatly to the evolution of Reliability Excellence (Rx). Our Powered by Rx® approach creates reliability-centric standard practices for business processes, operational and maintenance work execution, asset reliability and organizational effectiveness. Our "diagnose before prescribing" philosophy results in providing optimal solutions to our clients' needs, including holistic transformations based upon our Reliability Excellence Model, targeted reliability and asset management services necessary to resolve specific tactical issues that are limiting performance, and change management services vital to the success and sustainability of most initiatives.