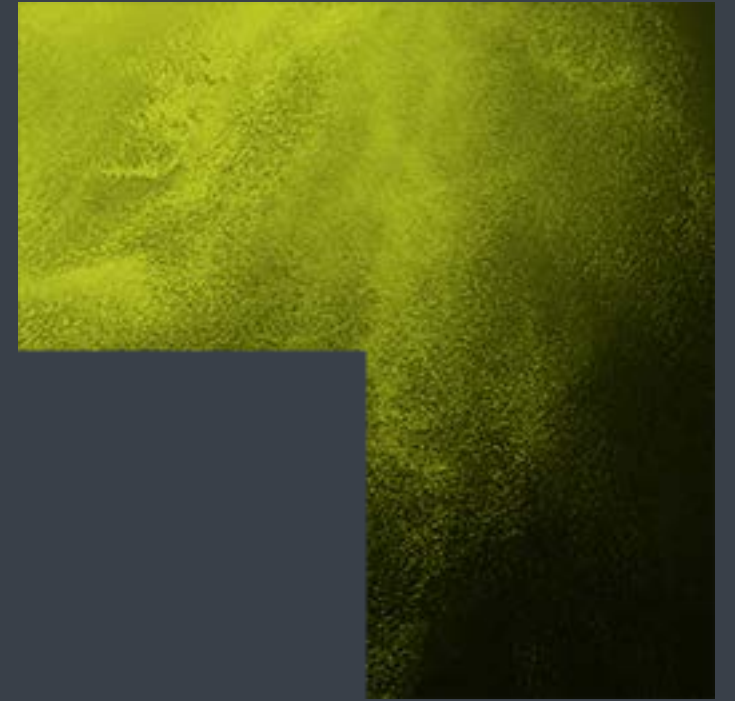


COUNCIL, THE BUILDER - A SUCCESSFUL DIY OPERATION

Ian Ho and Ash Deshpande

**HARRISON
GRIERSON**



MT ISA UPGRADE – A STORY !



COURAGE



DETERMINATION



ENDURANCE



LESSONS LEARNT



STORY LINE



PROJECT STAGES



Stage 1 Network Upgrade

- Reduce network overflows
- Increase conveyance capacity
- New rising mains and pump stations

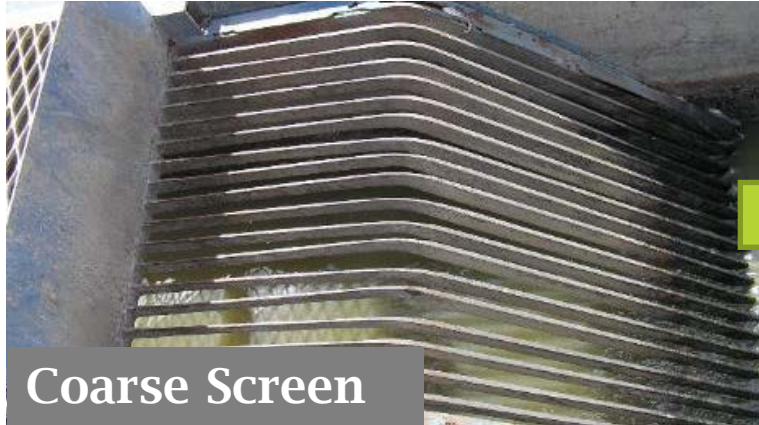
Stage 2 WWRP Upgrade

- Comply with EA limits
- Achieve Class A Recycled Water
- New Tertiary Treatment and Upgrade Secondary Treatment

Stage 3 Effluent Reuse

- Supply Class A recycled water for irrigation
 - Increase irrigation efficiency through automation
-

THE ORIGINAL PLANT



INLET SCREEN – A TRIAL



Mike Salmon, Director Engineering Services, Cr Phil Barwick, Mayor McCulloch, Jennifer Howard, CEO Emilio Cianetti and Ricardo Marino Manager Technical Services.

PLANT UPGRADE



Comply with Permit

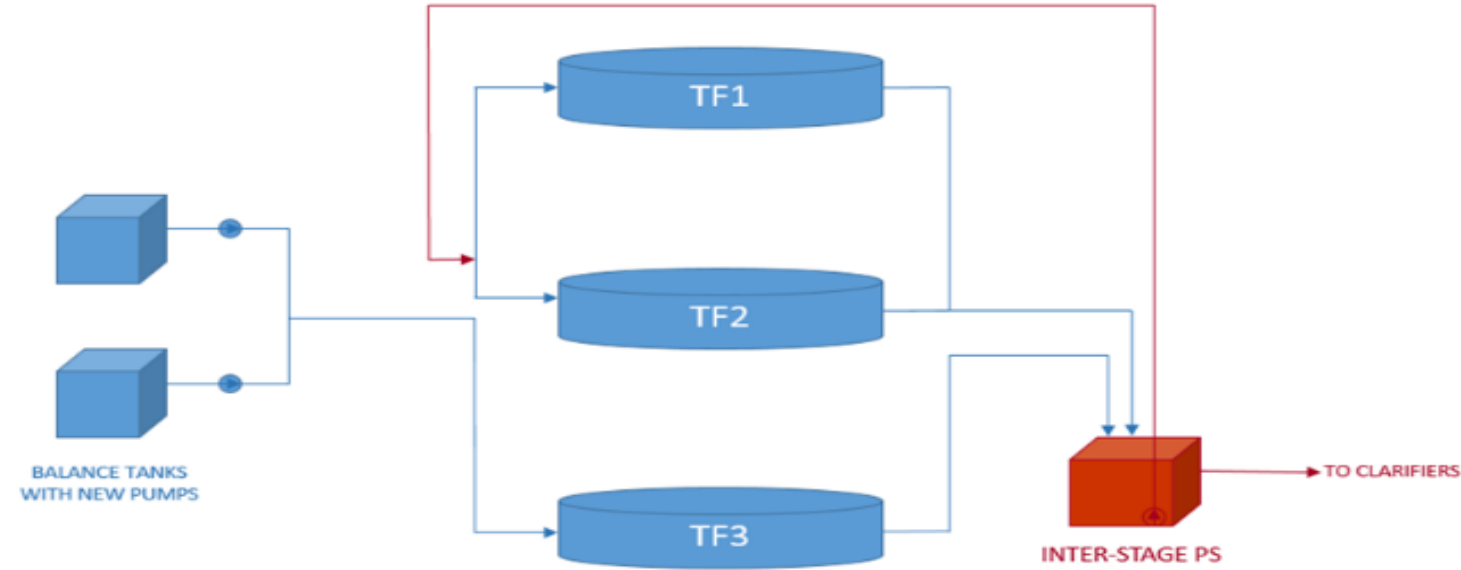
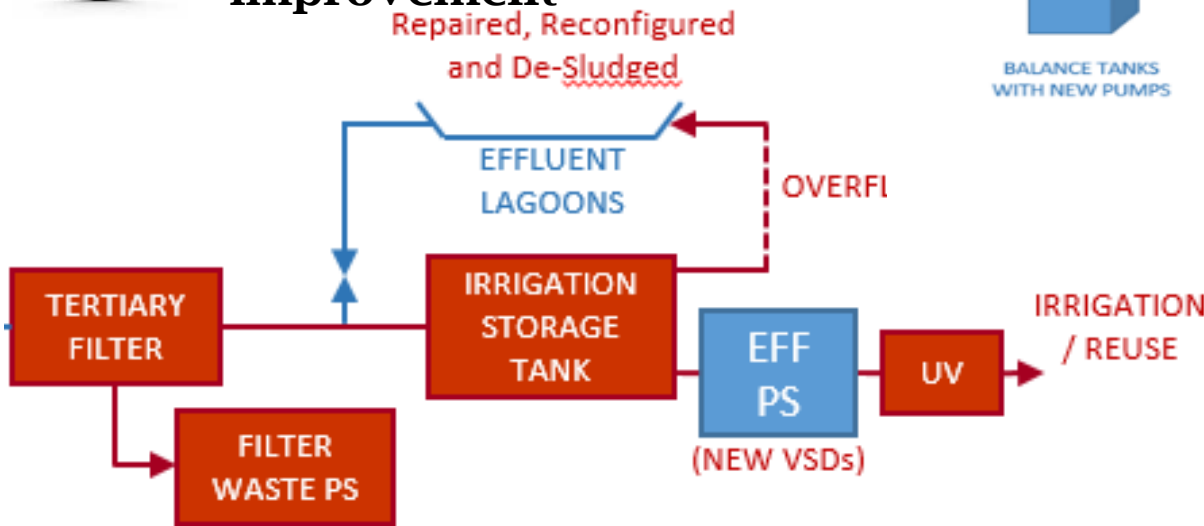


Achieve Class A Standard

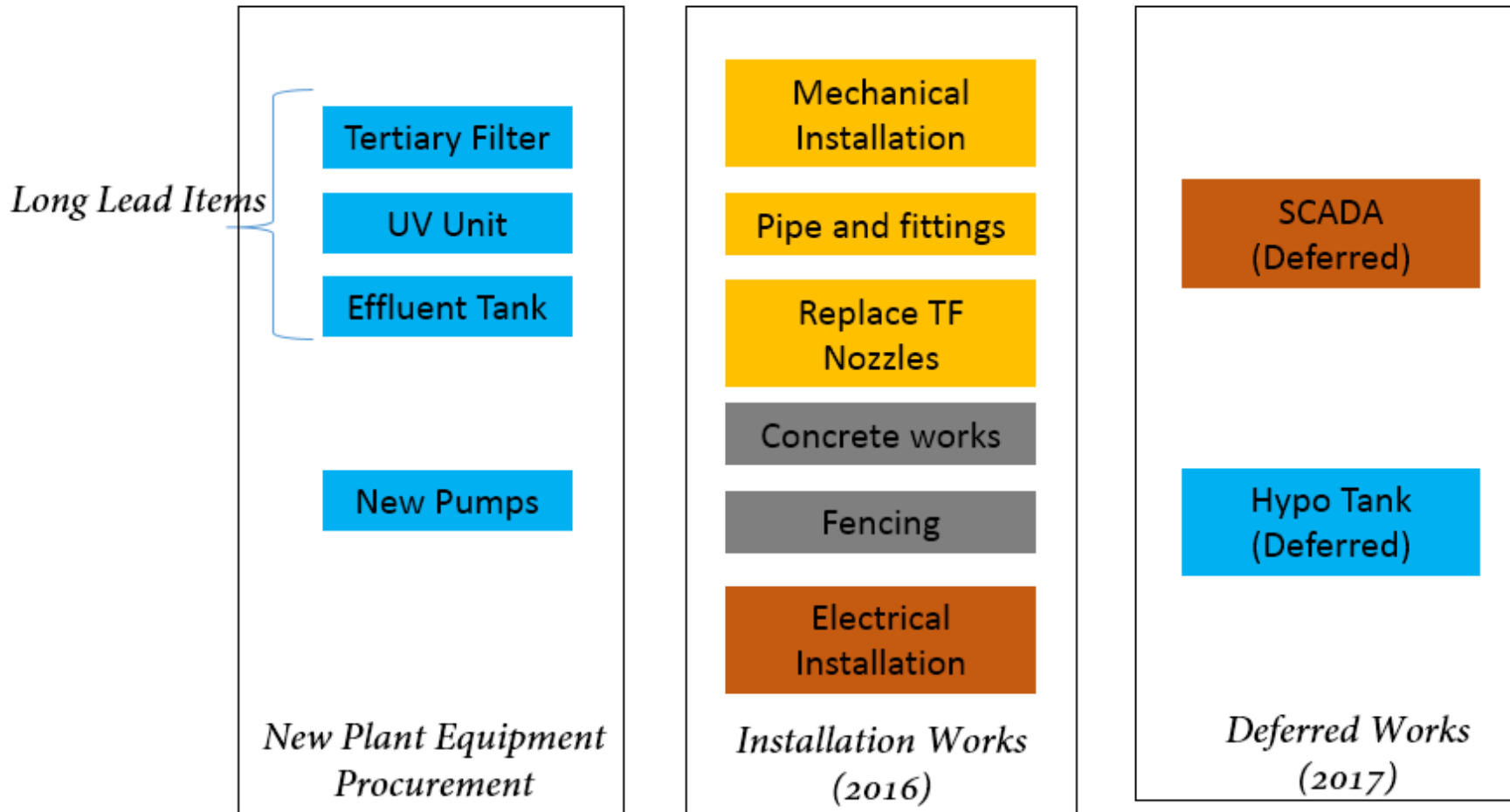


General plant improvement

Trickling Filters in Series (TF3 as Stage 1, TF1 and TF2 as Stage 2)



PROCUREMENT PACKAGES (AS OF EARLY 2016)



PROJECT DELIVERY – PART 1 (2016)



Long lead items ordered

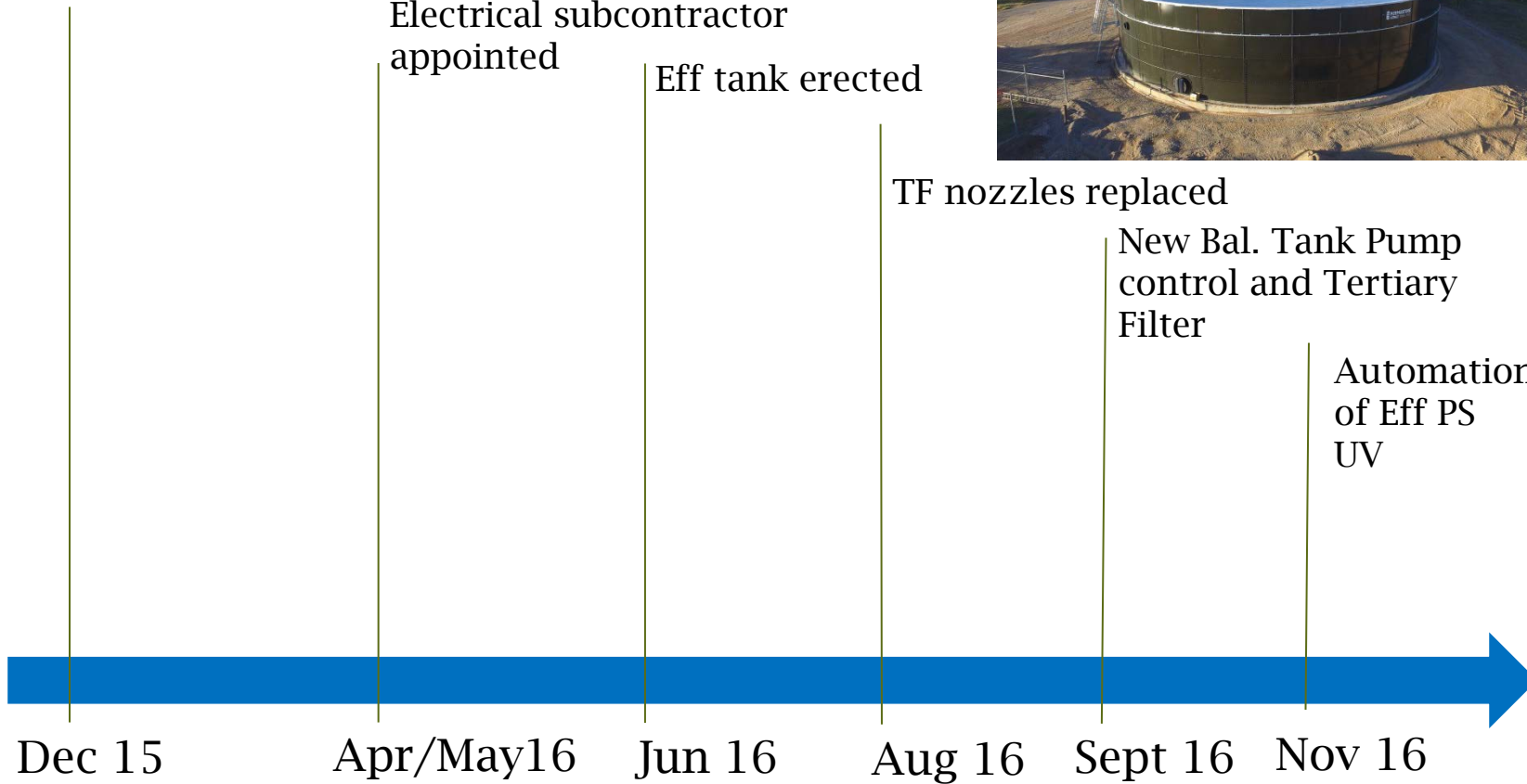
Electrical subcontractor appointed

Eff tank erected

TF nozzles replaced

New Bal. Tank Pump control and Tertiary Filter

Automation of Eff PS UV



PROJECT DELIVERY – PART 2 (2017)



SCADA tender awarded

Eff PS replacement
Approved
Irrigation Field
Actuators
Ordered

Plant PLC and
instruments ordered

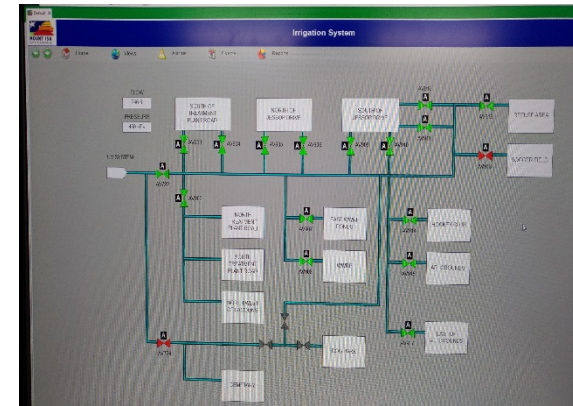
Commissioning of
new Eff Pumps,
Irrigation
automation,
Plant PLC and
SCADA

Fine-tuning of
Irrigation
System and
SCADA snags



Jan 17 Feb 17 Apr 17 June 17

Sept/Oct17



EFFLUENT QUALITY IMPROVEMENT



PERIOD	FINAL EFFLUENT QUALITY (MEAN VALUES)				COMMENTS
	cBOD ₅ (mg/L)	TSS (mg/L)	AmmN (mg/L)	E COLI. (CFU/100mL)	
Pre-Upgrade (Jan15-Aug16)	25	43	30*	640	*Clarifier effluent samples, instead of pond effluent
Post-Upgrade (Nov16 - Jun17)	3	3.5	4	<1	UV outlet samples
COMPLIANCE REQUIREMENTS					
EA Limits	<10	<10	-	<100	Mean values
Class A Recycled Water	-	-	-	<10	Mean values

PROJECT FINANCIALS



Item	Amount
WWRP Stage 2B Budget Cap	\$5.2M
Actual Cost - Secondary Upgrade/Electrical (Bal. Tank Pumps, Trickling Filter and Inter-Stage PS)	\$1.6M
Actual Cost - Tertiary Upgrade (Tertiary Filter, Irrigation Tank, UV and Eff Pump VSDs/Pump Automation/instrumentation)	\$2.5M
Actual Cost - 2017 (hypochlorite, irrigation automation, SCADA, Centralised PLC)	\$1.1M

LESSONS LEARNT AND CHALLENGES



Program/Timeline



Interfaces

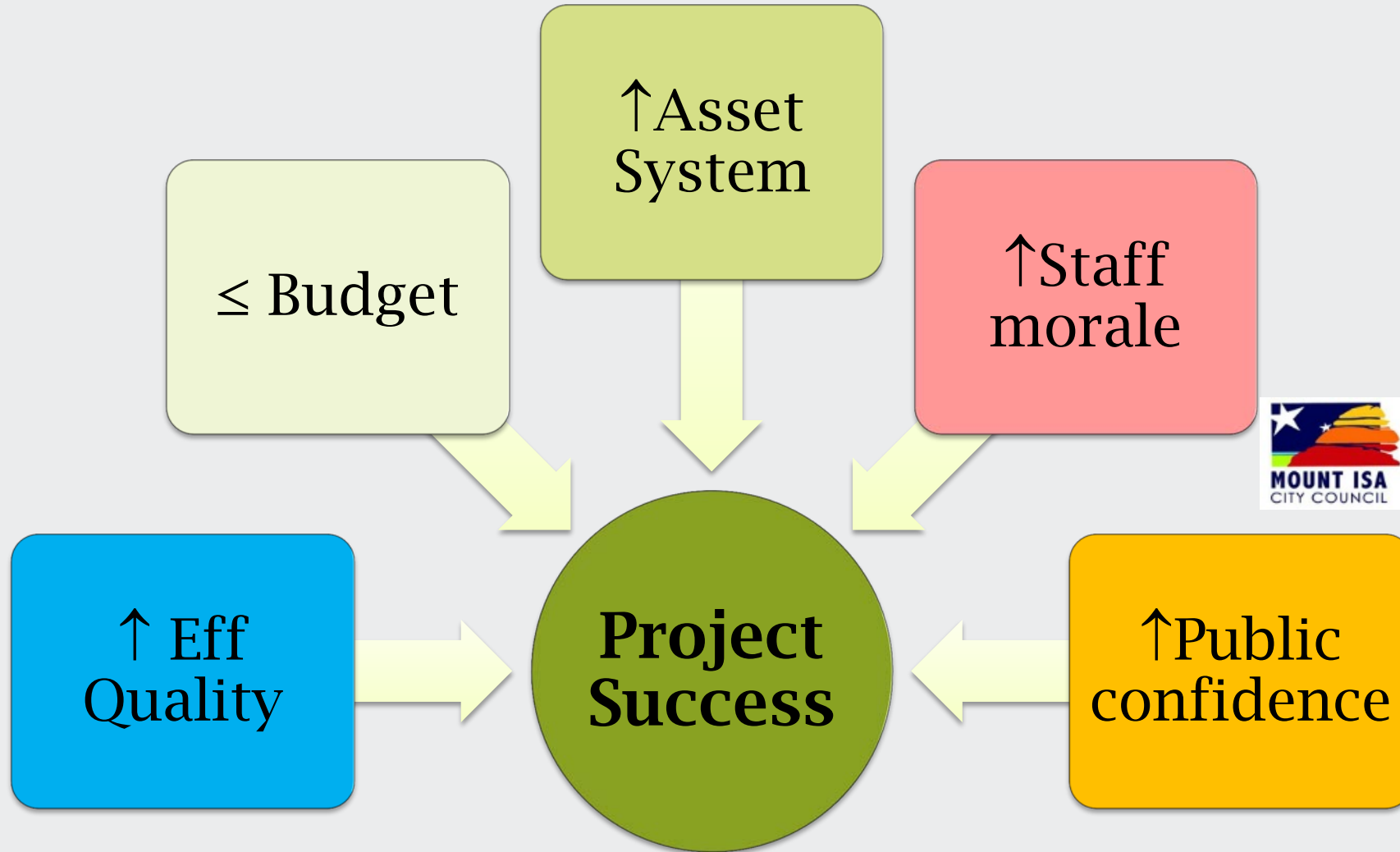


Skills



Quality

OUTCOMES



WATER MATTERS: Mayor Joyce McCulloch chats with Assistant Minister Jennifer Howard at the Sewerage Treatment works. Photos: Derek Barry

ACKNOWLEDGEMENT



- Mount Isa City Council
- Thorburn Associates
- Clancy
- Mikkelsen
- Xylem (Mount Isa branch)

