

**Parks Advisory Group - February 2011**

**RE-DESIGNING WORK SYSTEMS /  
SEASONAL WORKING HOURS**

Dave Henrys ~ APSE Best Value Consultancy  
Robert Crossman ~ Working Time Solutions Ltd.



**Launched during 1999 to provide advice, support, new skills and breadth of knowledge needed to meet the new demands placed on local authorities by best value**

# The Issues



## Economic



**Government  
spending  
cuts are  
affecting  
every local  
authority**

# The Issues



## Making Savings

1. Job Cuts

OR





# The Issues



## Making Savings

### 2. Service Redesign



# The Issues

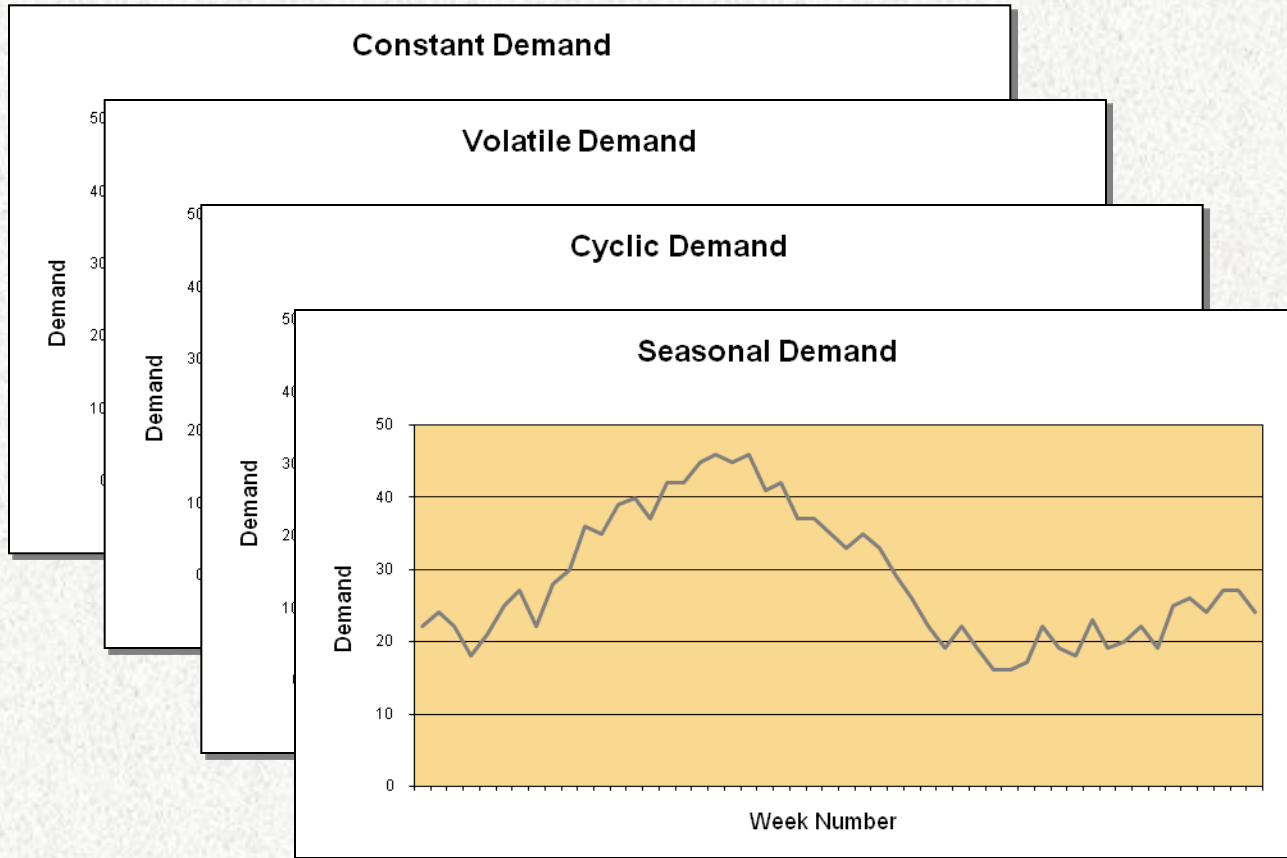


## Service Redesign

- **Assessing demand**
- **Meeting demand**
- **Working smarter**
- **Overtime reduction**
- **Seasonal working**
- **“Sweating Assets”**



# What is the work demand?



# Examples of work demands

## Constant demand

- Refuse Collection
- CCTV Monitoring

## Volatile demand

- Housing Repairs
- Call Centres





# Examples of work demands

## Cyclic demand

- **Street Cleansing**
- **Street Lighting**

## Seasonal demand

- **Grass Cutting**
- **Green Waste Collection**
- **Winter Maintenance**



# Meeting the Demand

- **How much work is involved?**
- **How much work can be achieved?**
  - **Amount of grass / hedges cut per hour**
  - **Number of plants put in per hour / sq.metre**
  - **Area sprayed per hour**
- **Standard Minute Values**



# Critical Examination



- **What?**
- **Where?**
- **When?**
- **Who?**
- **How?**

<u>WHAT</u> is it achieved?	<u>Is It Necessary?</u> (if so - <u>WHY?</u> )	<u>What ELSE</u> could be done?	<u>What SHOULD</u> be done?
<u>WHERE</u> is it done?	<u>WHY THERE?</u>	<u>Where ELSE</u> could it be done?	<u>Where SHOULD</u> it be done?
<u>WHEN</u> is it done?	<u>WHY THEN?</u>	<u>When ELSE</u> could it be done?	<u>When SHOULD</u> it be done?
<u>WHO</u> does it?	<u>WHY THAT PERSON?</u>	<u>Who ELSE</u> could do it?	<u>Who SHOULD</u> do it?
<u>HOW</u> is it done	<u>WHY THAT WAY?</u>	<u>How ELSE</u> could it be done?	<u>How SHOULD</u> it be done?



# **Shift Working /** **Annualised Hours**

- **When could / should the work be done**
- **Maximise available labour**
- **Increase flexibility**
- **Cover peaks and troughs**
- **Better use of resources and assets**
- **Control working hours & overtime**



# EXAMPLE – CCTV Monitoring



## The Brief

**Review the shift rota for nine staff**

**24 hour / 7 day continuous service**

**37 hour week**

**Shift patterns dictated by incident rates**

# Mathematics

- There are 21 different ways to allocate 5 shifts per week
- If you wanted to schedule for 2 staff, the 21 ways are squared = 441
- For 9 staff, 21 to the power of 9

$(21 \times 21 \times 21 \times 21 \times 21 \times 21 \times 21 \times 21 \times 21) = 794 \text{ billion !!}$

	MON	TUE	WED	THU	FRI	SAT	SUN
WEEK 1	D	D	D	D	D		
WEEK 2	D	D	D	D		D	
WEEK 3	D	D	D	D			D
WEEK 4	D	D	D		D	D	
WEEK 5	D	D	D		D		D
WEEK 6	D	D	D			D	D
WEEK 7	D	D		D	D	D	
WEEK 8	D	D		D	D		D
WEEK 9	D	D		D		D	D
WEEK 10	D	D			D	D	D
WEEK 11	D		D	D	D	D	
WEEK 12	D		D	D	D		D
WEEK 13	D		D	D		D	D
WEEK 14	D		D		D	D	D
WEEK 15	D			D	D	D	D
WEEK 16		D	D	D	D	D	
WEEK 17		D	D	D	D		D
WEEK 18		D	D	D		D	D
WEEK 19		D	D		D	D	D
WEEK 20		D		D	D	D	D
WEEK 21			D	D	D	D	D

# WORK Scheduling™

WORK Scheduling™

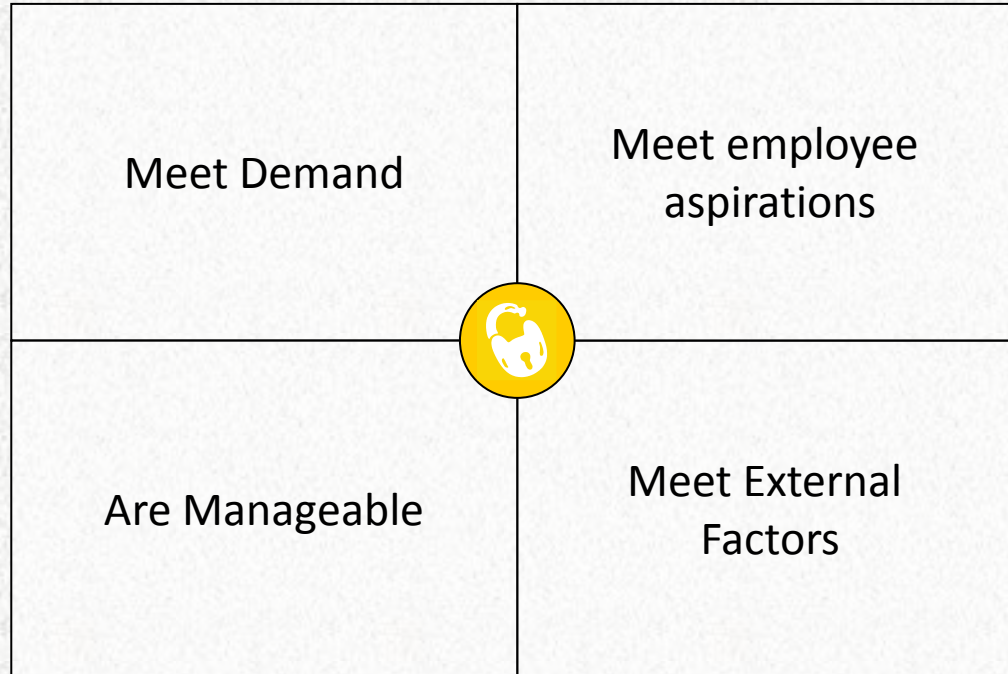
Core, Rota '8s V1'

Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1	D 0600-1410	D 0600-1410	D 0600-1410		A 1800-0100	A 1800-0100	A 1800-0100	45.51
2	A 1400-2210	A 1400-2210	A 1400-2210			D 0600-1410	D 0600-1410	40.85
3	D 0600-1410	D 0600-1410		A 1400-2210	A 1400-2210	A 1400-2210	A 1400-2210	49.02
4	A 1400-2210			D 0600-1410	D 0600-1410	N 2200-0610	N 2200-0610	40.85
5								0
6			D 0600-1410	D 0600-1410	D 0600-1410	A 1400-2210	A 1400-2210	40.85
7		A 1400-2210	A 1400-2210	A 1400-2210	A 1400-2210			32.68
8	N 2200-0610	N 2200-0610	N 2200-0610	N 2200-0610	N 2200-0610			40.85
9								0
Totals	40.85	40.85	40.85	40.85	47.85	39.68	39.68	290.61

- **Dedicated work scheduling software**
- **Working Time Solutions Ltd.**
- “annual hours / shift pattern planning / workforce forecasting & scheduling / matching workforce supply to business demand”
- **Working with APSE to develop public sector solutions**

# Lean-ER™

Implementing working time arrangements that:





# Working Time Solutions Limited



- Over 15 years specific subject matter experience
- UK-based, track record of growth and profitability
- Proven track record – establishing and delivering ROI
- Technology led, tailored solutions
- Innovation
- Unique business model comprises: -
  - Software tools
  - Service range
  - Knowledge transfer
  - Structured methodologies
  - Change management and engagement expertise
  - Single source for all working time needs
  - Ongoing support and continuous improvement

# Who else has changed?



- Avon Cosmetics
- Aventis
- Balfour Beatty
- Cadbury
- Celtic Manor Resort
- Coca Cola Enterprises
- Constellation Europe
- Dublin Airport Authority
- East Midlands Ambulance
- EMC Computer
- Foreign & Commonwealth Office
- GlaxoSmithKline
- Historic Royal Palaces
- Ineos Grangemouth
- PPG Architectural Coatings
- Royal Holloway University
- Space Engineering Services
- Severn Trent Water
- South Central Ambulance
- Thames Water
- United Biscuits
- York Minster



# Shift and Rota Patterns



Popular formats from the Toolkit:

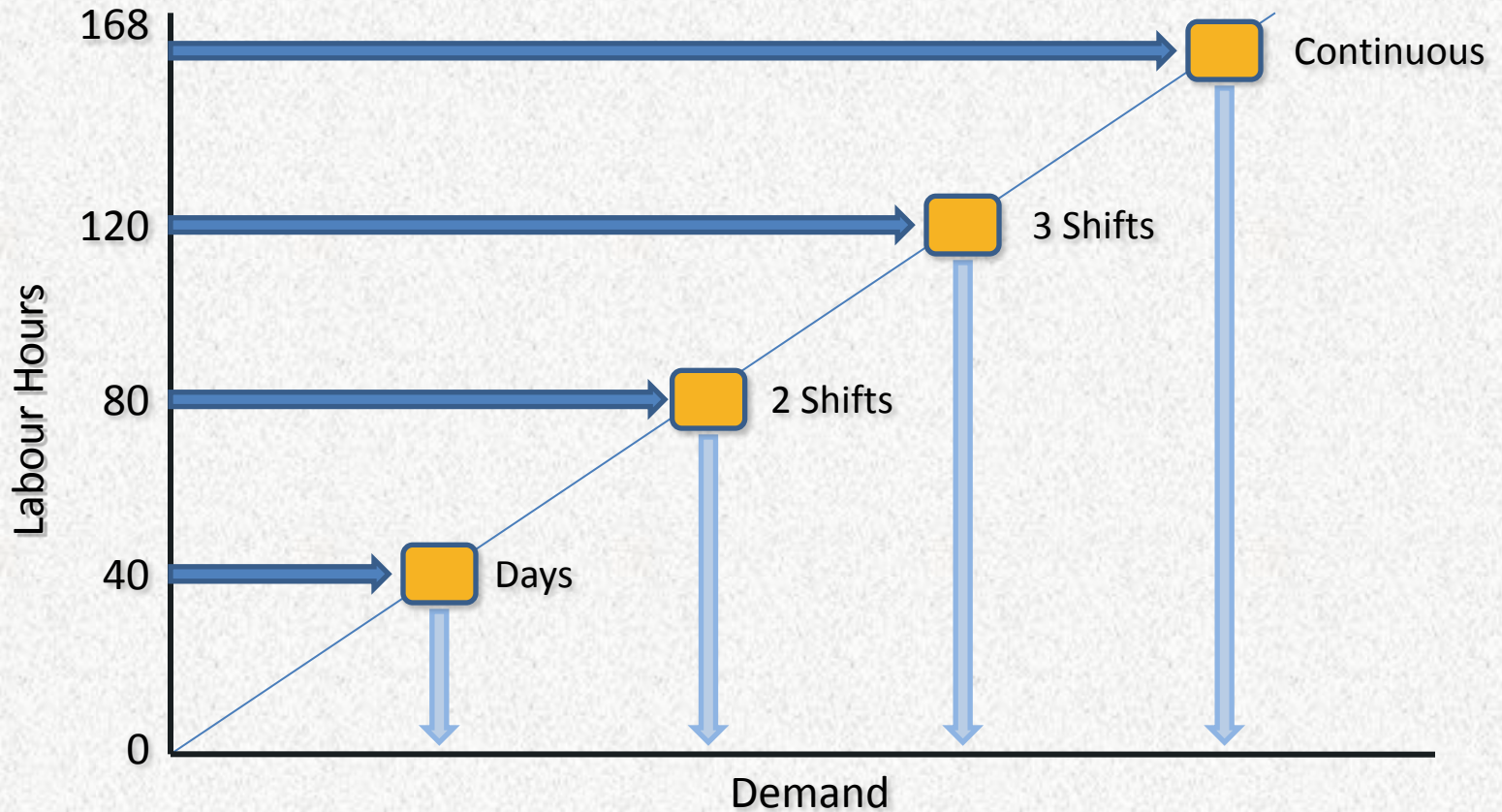
Systems using 8 or 12 hour shifts, with holidays on request:

- Day work
- Staggered Days
- Double-days (rotating or fixed)
- Evening shift
- Regular nightshift
- 3-shift semi-continuous
- Continuous rotating, including: 4-on 4-off, 'Continental'



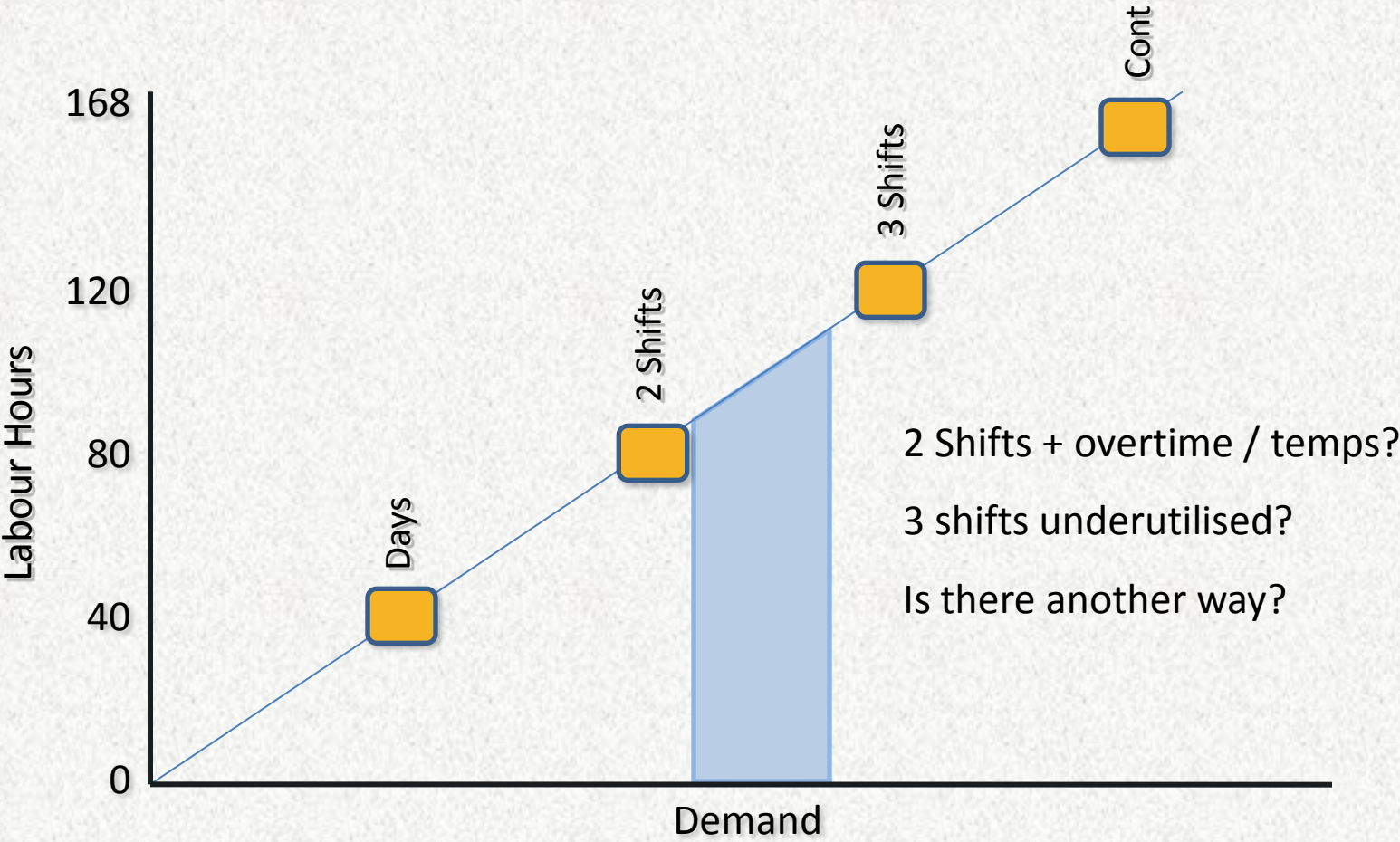


# What demand can we satisfy?

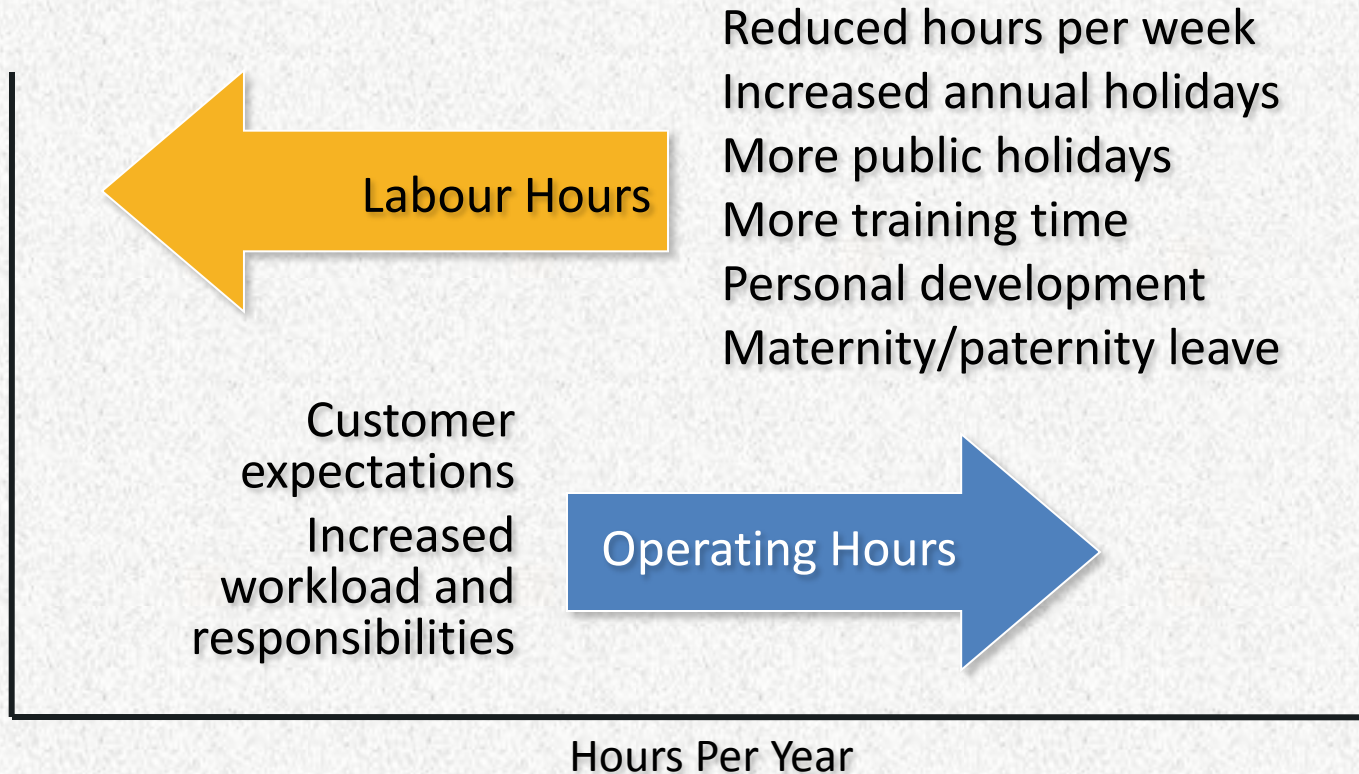




# How can supply match our demand?



# Conflicting requirements



# Labour: What it costs v. What we get

## Traditionally:

37 hours per week contract, 25 days annual leave, 8 days public holiday

## Gross Hours:

52.18 weeks x 37 hours per week = 1,931 hours

## Net Hours:

Annual holiday allowance (25 days ÷ 5) = 5.00 weeks

Public holiday allowance (8 days ÷ 5) = 1.60 weeks

= 6.60 weeks

45.58 weeks (52.18 – 6.60) x 37 hours = 1,686 hours

# Matching The Business Need

*“...we must have one presence 24 hours a day, 7 days a week in the Control Room, so how many people do we need?”*

**Additionally:**

1 person will be working on mornings,  $265 \times 25 \text{ days} \times 24 \text{ hrs} = 8,766 \text{ hrs}$

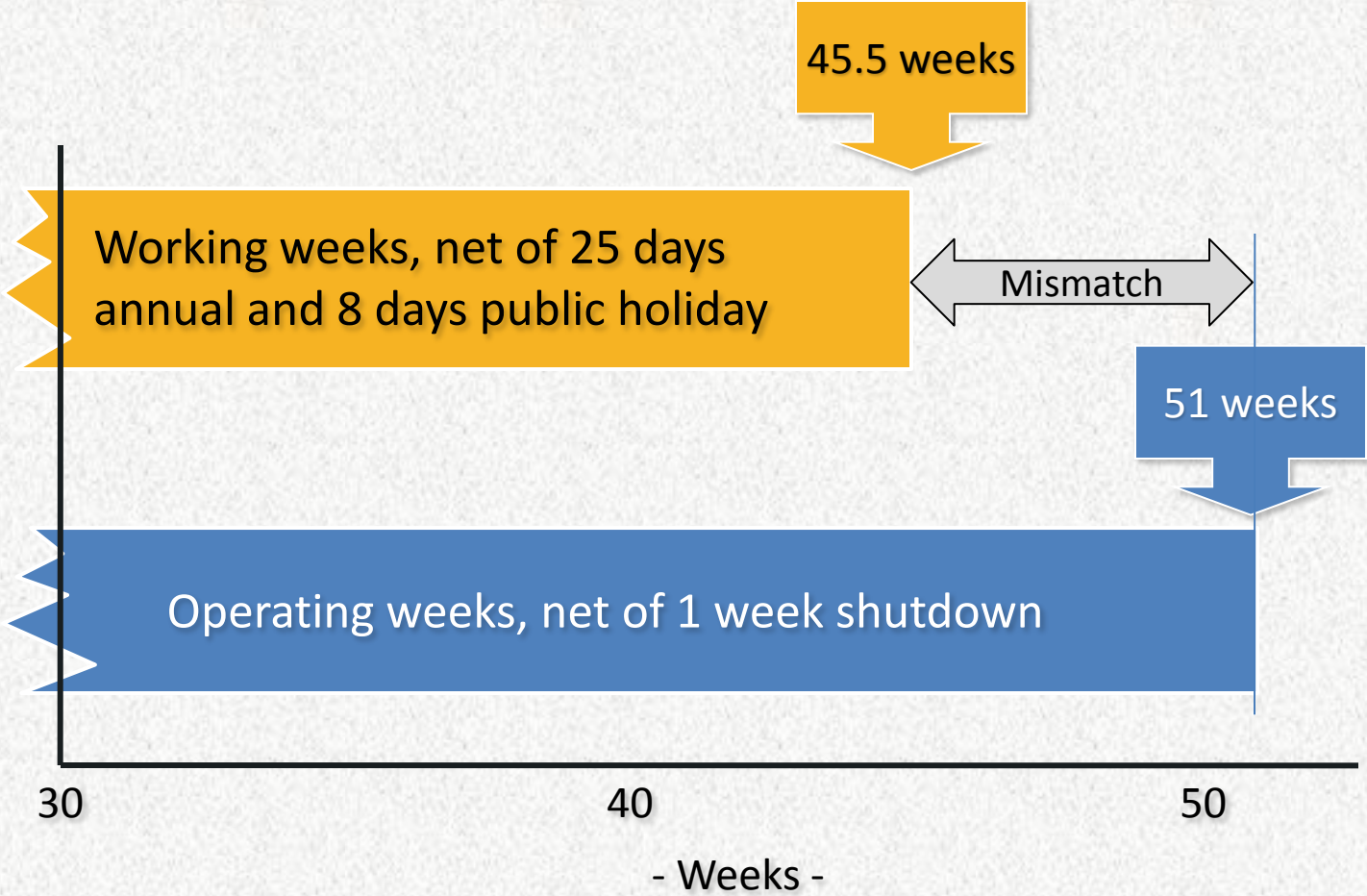
1 on afternoons, 1 on nights and 1 on rest  $= 4 \text{ people}$

Labour structure based on  $(8,766 \div 1,686) = 5.2 \text{ staff}$





# Holiday Management



# Responding to the Holiday mismatch

## Handling Holiday Absence:

- Get ahead / catch up
- Run short-handed
- Transferees from other departments
- Temporary external labour resources
- Adopt reduced target
- Fail the service



# Holidays

- Holidays are a major issue in designing shift patterns
- All workers entitled to holiday, every year
- Holiday issue compounded in seasonal environments where demand is higher in summer
- “Holidays Included” - all the staff have their holidays incorporated into the shift pattern at the start of the year





# Rostered Holidays

## Employee Benefits:

- Transparency
- Flexibility to swap
- Increased leisure time
- Equity

## Employer Benefits

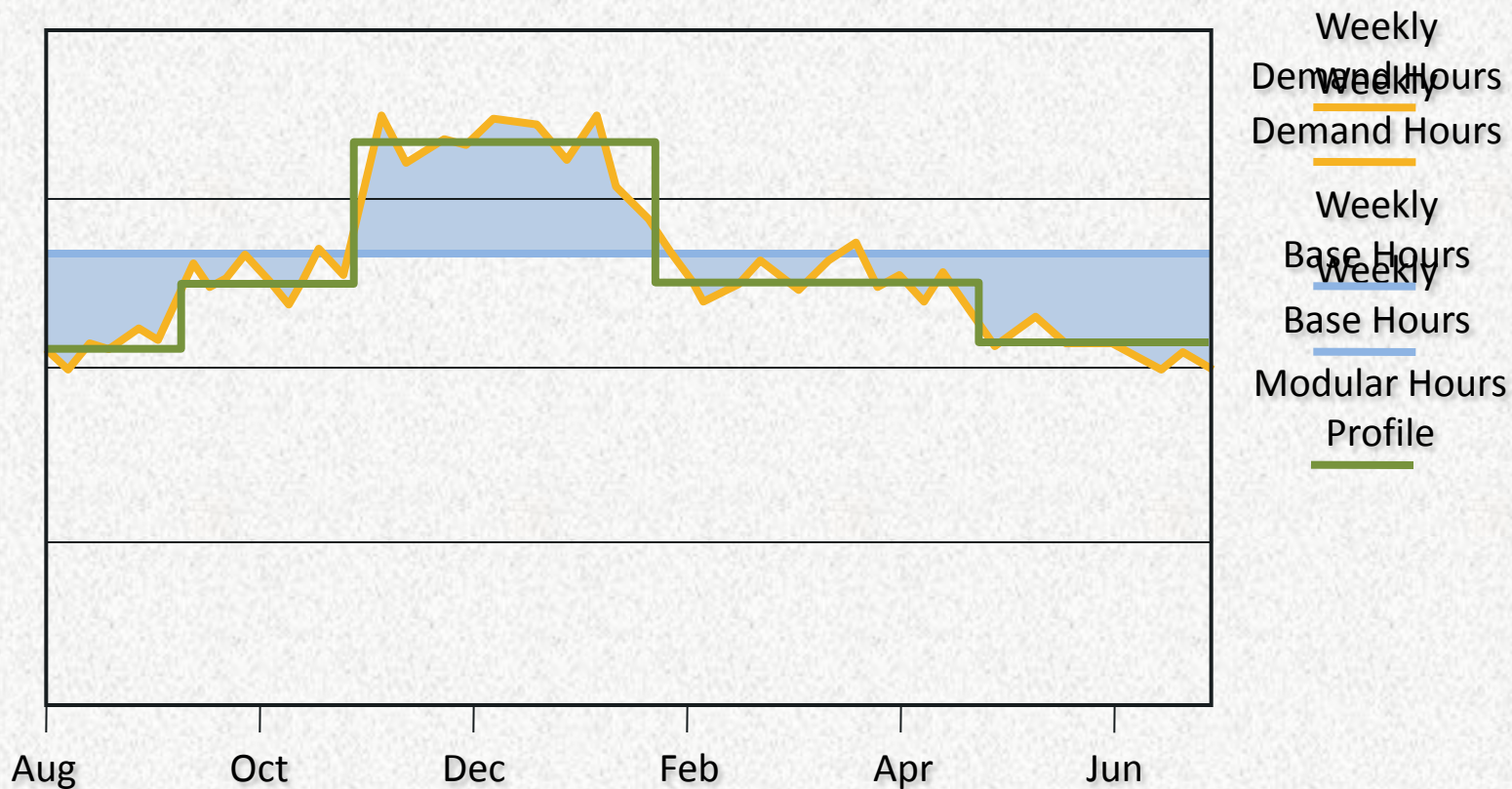
- Reduced cost of cover
- Constant staffing - service continuation / use of equipment
- Reduced administration





# Seasonal Demand Profile

## Seasonal Demand Profile & Solution



# 4 Team Seasonal Rota Progression



## Low Season 10 Weeks

Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1		Day 8	Day 8	Day 8	Day 8			32
2	Day 8	Day 8		Day 8	Day 8			32
3	Day 8	Day 8	Day 8					24
4								0
<b>Totals</b>	<b>16</b>	<b>24</b>	<b>16</b>	<b>16</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>88</b>

## Core Season 26 Weeks

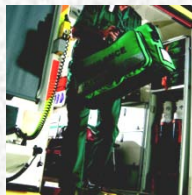
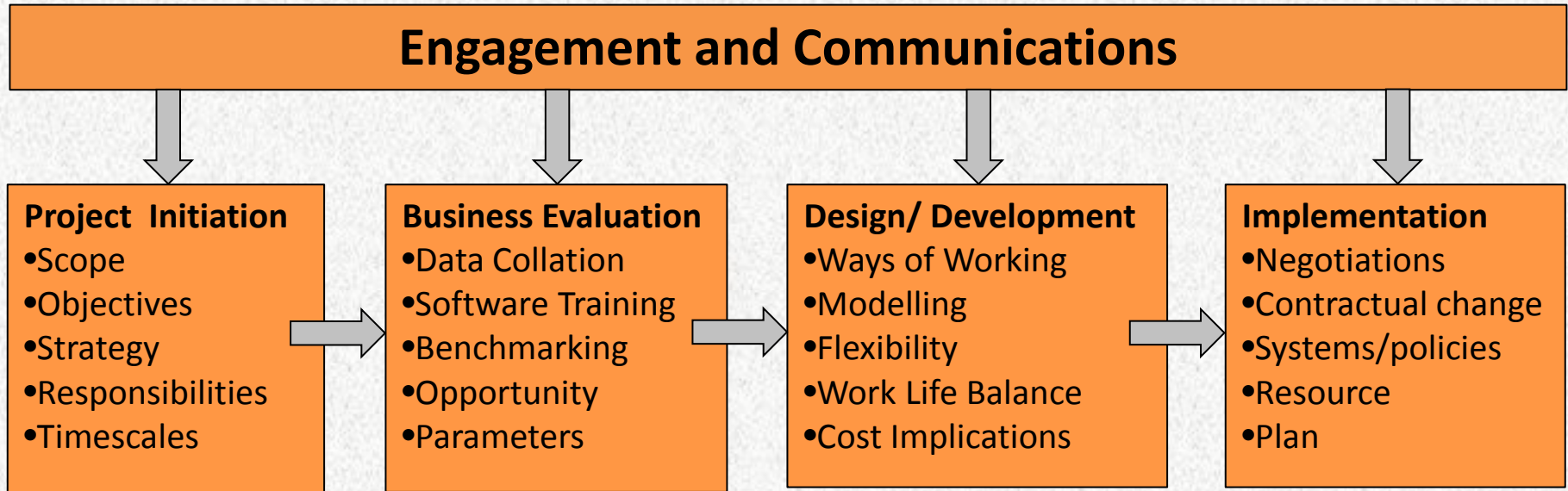
Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1	Day 8	Day 8	Day 8	Day 8	Day 8			40
2	Day 8	Day 8	Day 8	Day 8	Day 8			40
3	Day 8	Day 8	Day 8	Day 8	Day 8			40
4								0
<b>Totals</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>24</b>	<b>0</b>	<b>0</b>	<b>120</b>

## High Season 16 Weeks

Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1	Day 10	Day 10	Day 8	Day 8	Day 8			44
2	Day 8	Day 8	Day 8	Day 8	Day 8	Day 8		48
3	Day 8	Day 10	Day 10	Day 8	Day 8			44
4	Day 8	Day 8	Day 10	Day 10				36
<b>Totals</b>	<b>34</b>	<b>36</b>	<b>36</b>	<b>34</b>	<b>24</b>	<b>8</b>	<b>0</b>	<b>172</b>

Average of 1696 hours, with 36 hours unrostered reserve

# Lean-ER™ Project Approach





# Local Authority Case Study

## Streetscene Review



**Assess work demand**



**Put together rotas & other working patterns**



# Local Authority Case Study

Objectives :- Savings of £0.5 million  
Retention of service in-house  
No loss of service  
No job cuts



**Street Cleansing :-**  
Massive overtime costs  
Redefining standards



**Grounds Maintenance :-**  
50% of workforce on seasonal hours  
Big reliance on agency workers

# Seasonal Working

Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1	07-17	07-17	07-17	07-17	07-17	08-12		51.5
2	07-17	07-17	07-17	07-17	07-17			47.5
3	07-17	07-17	07-17	07-17	07-17			47.5
4	07-17	07-17	07-17	07-17	07-17			47.5
5								0
Totals	38	38	38	38	38	4	0	194

Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1	08-15	08-15	08-15	08-15	08-15	08-12		36.5
2	08-15	08-15	08-15	08-15	08-15			32.5
3	08-15	08-15	08-15	08-15	08-15			32.5
4	08-15	08-15	08-15	08-15	08-15			32.5
5								0
Totals	26	26	26	26	26	4	0	134

# Shift Work – Double Shift

Week/Team	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Totals
1	0730-1700	0730-1700	0730-1700	0730-1700	0730-1700			45
2	1200-2000	1200-2000	1200-2000	1200-2000	1200-2000			37.5
3	1200-2000	1200-2000	1200-2000	1200-2000	1200-2000			37.5
4	0400-1200	0400-1200	0400-1200			0400-1200	0400-1200	37.5
5	0400-1200			0400-1200	0400-1200			22.5
6		0400-1200	0400-1200	0400-1200	0400-1200			30
7								0
Totals	39	39	39	39	39	7.5	7.5	210

# **NEGOTIATIONS**

- **Holidays part-rostered allows a more continuous service**
- **£600,000 p.a. savings identified**
- **Some major losers in overtime**
- **Weekend work to be shared out**
- **Scope for “sweeteners”**