

Programme Analysis for Crew Deployment

Turning an MS Project tender programme into a defensible gang-day count.

South Circular Road to Bishop's Quay Cycle Scheme ·
Limerick

Gang requirement, by working day



3 gangs 2 gangs 1 gang 0 gangs

310 working days · 520 gang-days total, aggregated day-by-day from the real programme

1,019

21

520

Programme tasks parsed

Physical work fronts

Final gang-days

A repeatable process for converting a raw programme export into resourced crew requirements; turning a sequential date list into a scope-and-concurrency driven operational estimate.

THE PROBLEM

A Programme Tells You “When” - Pricing Needs “How Many”

1,019

Programme tasks parsed from the MS Project export.

21

Physical work fronts - 7
Accommodation Works sites + 14
Henry St / SCR mainline segments.

520

Final gang-days, down from 887 in the first estimated pass.

3

Peak concurrent live street-works fronts at any one time.

An operationally-priced estimate; resource × time rather than unit rate, lives or dies on one number: how many gangs need to be on site, for how many days. A tender programme exported from MS Project gives every task a start date and a finish date, but it doesn't hand you that number; it has to be built, task by task, by checking what's actually running on every working day of the contract.

Why this matters: get the gang count wrong and the whole operational price moves with it; traffic management, supervision, welfare and plant are all sized off the number of live fronts running at once, not off the BoQ quantities.

A Task List Isn't a Resourcing Plan

Four things that trip up a gang-day count taken straight from the programme

1

Mixed scope within one block of dates

A single programme section runs in-scope work (kerbing, footpath, ducting) and excluded work (surfacing, signage, road markings) back to back under the same heading. Tagging at section level either double-counts or drops gang-days.

2

Parent rows aren't work

MS Project summary rows roll up their children's dates and durations. Counting a parent row alongside its own child tasks as separate demand doubles every crew on that front.

3

Concurrency hides in the dates

Two fronts running the same week don't announce it. It only surfaces once every front's active date range is checked against every other front, day by day, across the full programme.

4

Estimated windows drift from reality

A fast first pass assumed a single exclusion window per front. That's quick, but it carries excluded-scope days straight into the gang count and overstates demand.

What Counts Toward a Gang-Day, and What Doesn't

KEPT IN SCOPE

- ✓ Sign / signal pole socket installation
- ✓ Standard kerb removal & re-laying
- ✓ Capping / subbase construction
- ✓ Concrete footpath & cycleway construction
- ✓ Drainage
- ✓ All other ducting; PL, ESB, telecom, traffic-signal, ENET

EXCLUDED

- X Bolt-down kerb installation
- X Planing / milling, asphalt binder & surface course
- X Road markings, sign erection, fencing, street furniture
- X Traffic lights & accessories, loop detectors (incl. ducting)
- X Blockwork / stonework, decorative granite & brick paving

THE APPROACH

A Four-Step Rebuild, Run Against the Real Task Dates

The same sequence every time, regardless of programme size

STEP 1

Tag Scope at Task Level

Review every leaf task against the confirmed inclusion / exclusion list and mark it directly on the task row; not the section heading.

STEP 2

Identify Leaf Tasks

Filter out parent / summary rows so only real work packages carry duration and gang-days; avoids double-counting rolled-up dates.

STEP 3

Group Into Work Fronts

Collapse 1,019 tasks into the 21 physical fronts actually being worked
- 7 Accommodation Works sites and
14 Henry St / SCR mainline segments.

STEP 4

Day-by-Day Active Check

For each of the 310 working days, count how many fronts have a kept-scope task actually running, then aggregate into gang bands.

This sets more than the gang count: how many traffic management setups, supervisory staff and welfare facilities need to be running at once, for how long, and where the operational cost base is genuinely driven by concurrency rather than by BoQ quantity.

WHY STEP 4 MATTERS

Two Live Streets, Running Almost the Whole Contract in Parallel

Henry Street and South Circular Road aren't a single crew moving down one road; they're two separate live streets, worked back-to-back with each other for nearly the full 267-day works period. Sub-sections within each street overlap one another at points too, opening a third front for weeks at a time.



Orange bands mark sub-section overlaps opening a third live front: 40 days where Henry St 1.3.3.3 and 1.3.3.4 run together (Mar–Apr '27); 33 days where SCR 1.3.4.6 and 1.3.4.7 run together (Aug–Sep '27). The two full-street bars themselves overlap for 427 of the 431 calendar days both streets are open.

WHAT THIS SETS, BEYOND THE GANG COUNT

- How many traffic management setups, supervisory staff and welfare facilities need to be running at once.
- How long each of those needs to stay in place, not just whether it's needed at all.
- Where the operational cost base is genuinely driven by concurrency rather than by BoQ quantity.

South Circular Road to Bishop's Quay, Limerick

Running the four steps against the real task list cut the gang-day count by more than a third



Gang-days by methodology pass. Each refinement replaced an assumption with an actual check; the final drop came from switching estimated per-front windows for real task-by-task dates, plus two newly-confirmed exclusions (bolt-down kerb, loop detector ducting).

520 Gang-Days Across 310 Working Days

Gangs Required	Working Days	Gang-Days
4	1	4
3	58	174
2	126	252
1	90	90
0 (Christmas moratorium / no kept-scope work active)	35	0
TOTAL	310	520

CORROBORATION, NOT JUST A COUNT

The gang-day total wasn't taken on its own. A bottom-up crew-loading build (rates and production outputs) and this top-down, programme-derived gang requirement were run independently and compared, they aligned within roughly 7%, giving two different routes to the same number rather than one unverified figure.

BUILT FOR DEFENSIBILITY

A dedicated methodology sheet sits in the pricing workbook alongside the numbers, documenting source data, leaf-task identification, the kept/excluded tagging, the 21-front grouping and the day-by-day aggregation; so the gang count can be defended line by line, not just quoted as a total.

The Workflow, Step by Step

STAGE 1: SCOPE & TASKS

1. Export the task list; ID, Outline Number, Task Name, Duration, Start, Finish.
2. Confirm the scope split with the estimator against BoQ coverage.
3. Tag every leaf task (grey-fill highlighting or a flag column).
4. Filter out parent / summary rows; leave only real work packages.

STAGE 2: FRONTS & GANGS

1. Group leaf tasks into the physical fronts resourced on site.
2. Per working day, list every front with a kept-scope task active.
3. Count active fronts per day and roll up into gang bands.
4. Cross-check against an independent bottom-up crew-loading build.
5. Document the method so the gang count can be defended, not just quoted.