I have ten targets

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Project | Project  Value  ($) | Probability of Success | Estimated  Bid Cost ($) | Allowed  Labor ($) | Estimated Project Profit ($) |
| A | 10,000,000 | 0.3 | 180,000 | 150,000 | 600,000 |
| B | 1,000,000 | 0.2 | 35,000 | 30,000 | 100,000 |
| C | 2,250,000 | .45 | 45,000 | 40,000 | 180,000 |
| D | 5,000,000 | .35 | 95,000 | 80,000 | 200,000 |
| E | 2,500,000 | .39 | 35,000 | 30,000 | 200,000 |
| F | 15,000,000 | .15 | 155,000 | 110,000 | 450,000 |
| G | 50,000,000 | .18 | 255,000 | 200,000 | 1,250,000 |
| H | 4,000,000 | .31 | 65,000 | 55,000 | 250,000 |
| I | 5,500,000 | .27 | 75,000 | 50,000 | 175,000 |
| J | 13,500,000 | .19 | 200,000 | 160,000 | 70,000 |

Proposal Estimated Labor Requirements (hours)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Business Target | Tech Vol | Mgt Vol | Cost Vol | Past Perf Vol |
| A | 300 | 150 | 200 | 180 |
| B | 80 | 40 | 60 | 10 |
| C | 120 | 80 | 100 | 60 |
| D | 100 | 50 | 80 | 40 |
| E | 80 | 40 | 60 | 20 |
| F | 150 | 80 | 100 | 120 |
| G | 200 | 120 | 150 | 140 |
| H | 100 | 50 | 75 | 40 |
| I | 100 | 50 | 75 | 40 |
| J | 150 | 60 | 50 | 160 |

Corporately, I have a maximum B&P Budget of $600,000 for all proposals.

I have the following writer’s available

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Writer | Type | Max Availability (hours) over 4 weeks | $/hr |  |
| T1 | Technical | 80 | 150 |  |
| T2 | Technical | 20 | 175 |  |
| T3 | Technical | 40 | 200 |  |
| T4 | Technical | 40 | 225 |  |
| T5 | Technical | 10 | 275 |  |
| T6 | Technical | 30 | 250 |  |
| M1 | Management | 80 | 150 |  |
| M2 | Management | 80 | 175 |  |
| M3 | Management | 40 | 200 |  |
| M4 | Management | 10 | 275 |  |
| M5 | Management | 10 | 250 |  |
| C1 | Cost | 40 | 125 |  |
| C2 | Cost | 80 | 100 |  |
| C3 | Cost | 80 | 100 |  |
| C4 | Cost | 10 | 175 |  |
| P1 | Past Performance | 40 | 100 |  |
| P2 | Past Performance | 60 | 95 |  |
| P3 | Past Performance | 80 | 75 |  |
| P4 | Past Performance | 60 | 115 |  |

Given the above information, I am trying to develop a linear programming model such that I maximize the number of possible bids given the limited resources of budgets and writers. Essentially, which of the 10 bids should I take on, given the limitations of availability and cost of writers.

I am assuming all bids are released for bid at the same time and are due at the same time over a 4 week period.