

## Planmore Enterprises, Inc. Preliminary Project Plan Quote

### Project Overview

The intent of this project is to transform one of two production facilities from a piece part process into a continuous roll process of manufacturing aluminum siding. This facility currently processes six-foot-wide panels into standard widths of finished aluminum siding at a production rate of 20 feet per minute.

Planmore Enterprises has recognized the need to move from pre-finished to continuous rolls of finished siding that reduces waste and prevents damage prior to installation. To keep up with the growing market for continuous rolls, Planmore has decided to procure a production facility expansion, which includes establishing a continuous, pre-finished aluminum siding line at their Chicago area facility.

The new line capacity is to be 30 feet per minute for six-foot wide rolls. A building addition will be made to the Chicago plant to house the new continuous production line. At the completion of the production validation and sign-off the existing panel processing equipment is to be removed from the site and disposed of.

### Initial Project concept

The plan is to create added manufacturing space by physically expanding the existing building. Maximum footprint of new building is 97 ft. by 300 ft. – along an existing wall. Production equipment is expected to occupy a physical space that is 200 feet long and 15 feet wide – uses a two-tier approach that can be 20 feet high or two stories high. The process follows the steps outlined here (per the RFP).

Steps 1, 2 and 3 are on the ground floor.

- 1) Raw material storage and handling – space for three rolls of unfinished aluminum. A lifting crane (hydraulic desired).
- 2) Two Feeder rollers – one roll in process and another on standby. As one is depleted the standby is joined to the first to ensure continuous material for the downstream processes.
- 3) Cleaning process has a washing station and a rinsing station

Steps 4 and 5 are on the upper level

- 4) Primer coating
- 5) Drying ovens

Steps 6 through 10 are on the ground level

- 6) Finish coating (painting)
- 7) Drying ovens
- 8) Automatic inspection station
- 9) Finished aluminum is rolled into coils and banded. There are two take-up reels with a small buffer to collect the continuous sheet as it is being changed from one take up reel to the other. When roll is complete the sheet is cut and placed on the other take-up reel where it is automatically banded and lifted (hydraulic) from the take-up reel to be placed in storage.
- 10) Storage for shipment to the finishing plant.

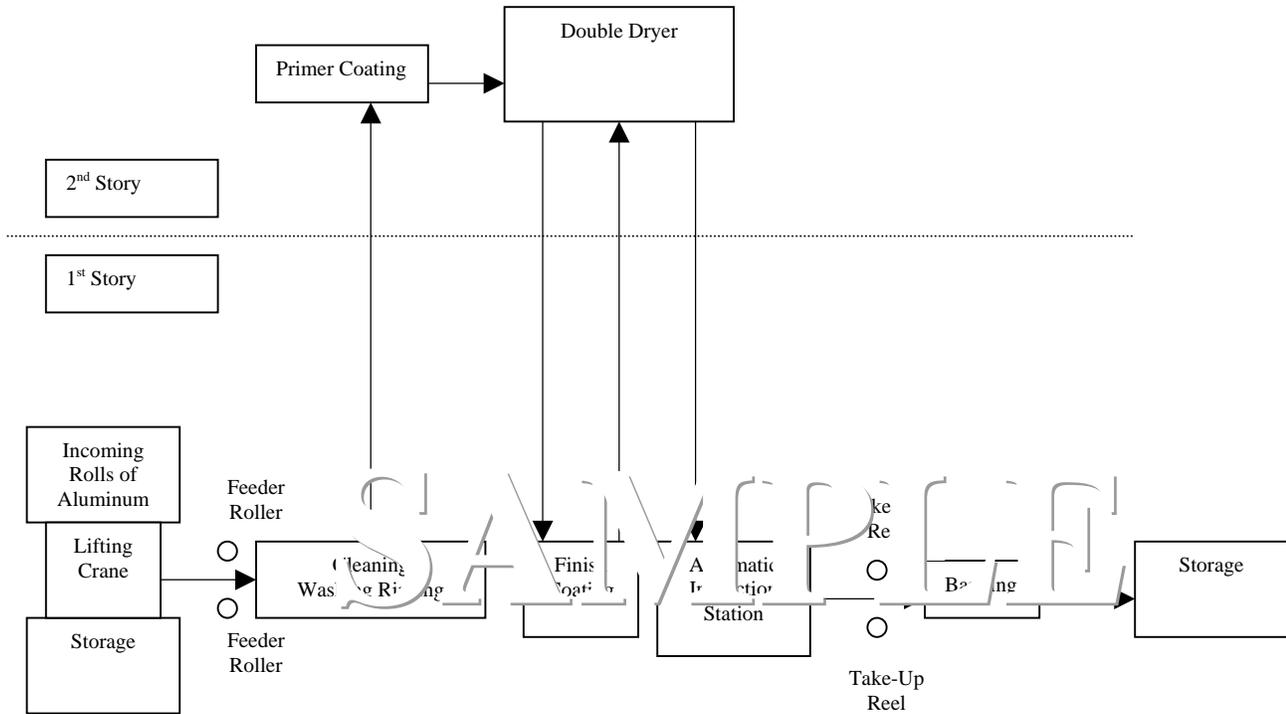
Bryant Engineering will subcontract the construction project and provide the design and specifications of the process and control equipment. Installation will be subcontracted to the equipment vendors. Support of all vendors will be maintained throughout trial runs as part of warranty program.

### What we don't know about the project.

- Time in obtaining and the cost of building permits.
- Type and cost of pollution control for the cleaning and painting processes.
- Type of process control system to link and process the cleaning, painting, priming, and banding together and monitoring of (a) wet undercoated condition.
- Is the city infrastructure sufficient to handle the load created by the new facility (fresh water, wastewater and electric are the primary concerns)?
- Will waste elements require pre-treatment prior to disposal?
- How much storage space is required?
- Since the production facility is 15 feet wide by 200 feet long, do we need to construct a building that is 97 feet wide by 300 feet long?



**Technical Approach**  
Concept Layout



Outline your preliminary ideas on the technical approach and means to perform the work to produce the deliverables

We need to first be responsive to the RFP. This is really two projects: new building construction and new aluminum process line. Additionally we need to flesh in the gaps in the projects. We can meet with several of our building contractors to get preliminary information on the construction issues and costs.

As for the process equipment we will need to turn engineering loose ASAP to put together enough information for the project to be properly mapped out. We will need to team with suppliers to pull this off in the time and cost restraints allowed. The control system offers us an opportunity to expand our experience base for process and quality control.

**Anticipated Problems for Project Manager**

Challenges and how they will be handled

- Meeting goals for all sub-sections of the plan - Critical milestones and adjustments needed
- Laying out equipment in a manner that it functions well on the floor also with making full use of the limited space
- Taking key people off of projects that are important to this one, complete in specified requirements
- Control and monitoring of two simultaneous projects. Use of in-house tracking and evaluation tools, creation of strong project team. Ability to delegate responsibility.

Risks and risk management

Risk	Mitigation
Unanticipated problems with the design of our plant expansion that may prevent us from obtaining the proper site permits	Start greasing the skids early – contact local/county/state engineering and EPA offices. Use their inputs for both projects.
Unexpected problems with mother nature could delay construction	Build some down time into the schedule to allow for weather.
The availability and cost of raw materials for construction and production could negatively impact our profit margin	Identify high cost elements early and attempt a partnering strategy with suppliers to reduce costs.
Operational risks	Maintain services of equipment vendors to resolve any glitches in process equipment and procedures.
Project completion schedule delays due to labor cost overruns due to poor procurement strategy of expansion plant equipment	Prior to RFP response PM needs to convene a strategy session with in-house experts on both projects to orchestrate optimum strategy.
Quality control attributes. What is needed to be measured/inspected?	Work with customer to determine needs/accuracy.
Decontamination of Old equipment prior to disposal	Perform early evaluation of contaminants and methods to eliminate. Look for salvage house that will take equipment as is.

How you will make this project successful?

Attack the unknowns and get answers. Risk analysis will need to be performed on all phases of both projects. Items identified as high risk will get most attention. Others will be handled with educated assumptions.

One key is to assemble a strong and effective project team. In-house experts on construction, process design, procurement, technical publications and training will be needed. If an expert does not exist in-house we need to bring it in.

Another key will be the monitoring and control of both projects and cost. There will be weekly reviews of both to allow us time to recognize problems and put in place corrective actions to keep the overall project on schedule and on cost.

**Preliminary Work Breakdown Structure (WBS):  
Projects Major Tasks and Organizational Involvement**

1.0 Expansion Project		
1.1 Project Management		
	1.1.1 Develop Project Plan	
		1.1.1.1 ID goals
		1.1.1.2 Develop plan
		1.1.1.3 Prepare "buy i
	1.1.2 Implement plan	
		1.1.2.1 Prepare board approval
		1.1.2.2 Monitor / coordinate process
		1.1.2.3 Close out project at finish
1.2 Engineering		
	1.2.1. Select Engineers	
		1.2.1.1 Meet with vendors
		1.2.1.2 Send out RFP
		1.2.1.3 Review bids
		1.2.1.4 Select successful bidder
		1.2.1.5 Post review bid requirements
1.3 Equipment		
	1.3.1 Select Manufacturer	
		1.3.1.1 Meet with vendors
		1.3.1.2 Tour actual customers' plants
		1.3.1.3 Send out RFP
		1.3.1.4 Review bids
		1.3.1.5 Select successful bidder
1.4 Contractor		
	1.4.1 Select Contractor	
		1.4.1.1 Meet with contractor
		1.4.1.2 Tour actual sites
		1.4.1.3 Send out RFP
		1.4.1.4 Review bids
		1.4.1.5 Select successful bidder
1.5 Human Resources		
	1.5.1 Select employees	
		1.5.1.1 Identify skills needed
		1.5.1.2 Develop job responsibilities
		1.5.1.3 Develop test for requirements
		1.5.1.4 Administer test to applicants
		1.5.1.5 Select successful applicants
		1.5.1.6 Train employees
1.6 Installation		
	1.6.1 Prepare area	
		1.6.1.1 Clear & level location.
	1.6.2 Prepare machinery	
		1.6.2.1 Receive machinery
		1.6.2.2 Un-crate machinery
	1.6.3 Hook up machinery	
		1.6.3.1 Hard-wire machinery
		1.6.3.2 Install safety mechanisms
1.7 Sign-off		
	1.7.1 Test machinery	
		1.7.1.1 Low speed test
		1.7.1.2 Medium speed test
		1.7.1.3 High speed test
1.8 Remove Obsolete Eq		
	1.8.1 Contract for removal	
		1.8.1.1 Ship to salvage yard.

Preliminary duration's and cost for major tasks

For the duration of each major task please refer to the accompanying Gantt Chart. The estimated cost is as follows:

Major Tasks/Organizational Involvement	Cost
Project Management	\$336,700
Contractor	\$333,225
Human Resources	\$250
Engineering	\$450
Equipment	\$1,9100
Installation	\$572,700
Test/Sign-Off	\$30,600
Contingency (15% of total)	\$443,809
<b>TOTAL COST (Before Profit Target)</b>	<b>\$3,402,534</b>

Resource and skills requirements needed to do the work

Resource	Skills
Project Management	Organization, planning, monitor and control of both projects
Engineering – Construction	Support of PM in selection and monitoring/control of building contractor
Engineering – Design	Provide technical support and control of project. Provide technical support/Interconnectivity manuals/training
Human Resources	Training of operator on new system. Fill skill needs identified by project team and train new employees.
Procurement	Work with PM to identify qualified suppliers/contractors, manage the bid process, monitor and control project costs.

# Preliminary Project Schedule and Cost Estimates

## Preliminary Schedule

ID	Task Name	Duration	Start	Finish	2001			Qtr 4, 2001			Qtr 1, 2002			Qtr 2, 2002			Qtr 3
					Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	
1	<b>Terrain Tracker Expansion Project</b>	<b>181 days</b>	<b>Mon 8/13/01</b>	<b>Mon 4/22/02</b>													
2	<b>Project Management</b>	<b>136 days</b>	<b>Mon 8/13/01</b>	<b>Mon 2/18/02</b>													
3	<b>Develop Plan</b>	<b>20 days</b>	<b>Mon 8/13/01</b>	<b>Fri 9/7/01</b>													
4	ID G	5 days	Mon 8/13/01	Fri 8/17/01													
5	Develop	10 days	Mon 8/13/01	Fri 8/31/01													
6	Secure Buy-in	5 days	Mon 8/13/01	Fri 8/17/01													
7	<b>Implement Plan</b>	<b>36 days</b>	<b>Mon 8/13/01</b>	<b>Mon 9/17/01</b>													
8	Secure board approval	5 days	Mon 9/10/01	Fri 9/14/01													
9	Monitor	136 days	Mon 8/13/01	Mon 2/18/02													
10	Control	136 days	Mon 8/13/01	Mon 2/18/02													
11	<b>Engineering</b>	<b>47 days</b>	<b>Mon 9/17/01</b>	<b>Tue 11/20/01</b>													
12	Send out RFP	10 days	Mon 9/17/01	Fri 9/28/01													
13	Meet w/ vendors	10 days	Mon 10/15/01	Fri 10/26/01													
14	Review bids	10 days	Mon 10/29/01	Fri 11/9/01													
15	Select successful bidder	3 days	Mon 11/12/01	Wed 11/14/01													
16	Post review bid requirements	4 days	Thu 11/15/01	Tue 11/20/01													
17	<b>Equipment</b>	<b>53 days</b>	<b>Mon 9/17/01</b>	<b>Wed 11/28/01</b>													
18	Send out RFP	10 days	Mon 9/17/01	Fri 9/28/01													
19	Meet w/ vendors	10 days	Mon 10/15/01	Fri 10/26/01													
20	Tour vendor customer plants	10 days	Mon 10/29/01	Fri 11/9/01													
21	Review bids	10 days	Mon 11/12/01	Fri 11/23/01													
22	Select successful bidder	3 days	Wed 11/26/01	Fri 11/23/01													
23	<b>Contractor</b>	<b>13 days</b>	<b>Mon 11/12/01</b>	<b>Fri 11/23/01</b>													
24	Send out RFP	10 days	Mon 11/12/01	Fri 11/23/01													
25	Meet w/ contractors	10 days	Mon 10/15/01	Fri 10/26/01													
26	Tour actual sites	10 days	Mon 10/29/01	Fri 11/9/01													
27	Review bids	10 days	Mon 11/12/01	Fri 11/23/01													
28	Select successful bidder	3 days	Mon 11/26/01	Wed 11/28/01													
29	<b>Human Resources</b>	<b>24 days</b>	<b>Mon 9/17/01</b>	<b>Thu 10/18/01</b>													
30	Identify skills required	5 days	Mon 9/17/01	Fri 9/21/01													
31	Develop job responsibilities	5 days	Mon 9/24/01	Fri 9/28/01													
32	Develop test for requirements	3 days	Mon 10/1/01	Wed 10/3/01													
33	Administer test to applicants	4 days	Thu 10/4/01	Tue 10/9/01													
34	Select successful applicants	2 days	Wed 10/10/01	Thu 10/11/01													
35	Train employees	5 days	Fri 10/12/01	Thu 10/18/01													
36	<b>Plant Preparation</b>	<b>23 days</b>	<b>Thu 11/29/01</b>	<b>Mon 12/31/01</b>													
37	Create Floor Plan	5 days	Thu 11/29/01	Wed 12/5/01													
38	Purchase Manufacturing Line Materials	3 days	Thu 12/6/01	Mon 12/10/01													
39	Install Line Equipment	15 days	Tue 12/11/01	Mon 12/31/01													
40	<b>Installation</b>	<b>19 days</b>	<b>Tue 1/1/02</b>	<b>Fri 1/25/02</b>													
41	Clear and level location	5 days	Tue 1/1/02	Fri 1/11/02													
42	Receive machinery	2 days	Tue 1/8/02	Wed 1/15/02													
43	Un-crate machinery	2 days	Tue 1/15/02	Fri 1/18/02													
44	Hard wire machinery	2 days	Mon 1/21/02	Fri 1/25/02													
45	Install safety interlocks	3 days	Mon 1/21/02	Fri 1/25/02													
46	<b>Test</b>	<b>45 days</b>	<b>Mon 1/28/02</b>	<b>Fri 3/29/02</b>													
47	Low speed	15 days	Mon 1/28/02	Fri 2/15/02													
48	Medium speed	15 days	Mon 2/18/02	Fri 3/8/02													
49	High speed	15 days	Mon 3/11/02	Fri 3/29/02													
50	<b>Production</b>	<b>16 days</b>	<b>Mon 4/1/02</b>	<b>Mon 4/22/02</b>													
51	50% production capacity	15 days	Mon 4/1/02	Fri 4/19/02													
52	100% production capacity	1 day	Mon 4/22/02	Mon 4/22/02													
53	Post Implementation Review	0 days	Mon 4/22/02	Mon 4/22/02													

Initial estimate of total project cost for major WBS elements.

The initial cost estimate is \$2,747,600. This included the building and all associated costs, the fabrication equipment and installation of this equipment along with the test runs and documentation.

Economic Feasibility Study

Existing	Desired
6 foot wide panels	6 foot wide rolls
20 feet per minute	30 feet per minute
5 Shifts (8 hrs each)	2 Shifts (8 hrs each)
30 Days	6 days
40 weeks	48 weeks
12 Months	12 Months
414720 Minutes per year	276480 Minutes per year
8294400 feet per year	8294400 feet per year
\$1,800,000 Scrap and R/W Exp.	\$1,530,000 Scrap and R/W Exp.
Sat 1.5 x base rate	
3rd 1.1 x 1st/2nd rate	
40 employees first shift	75 employees on 1st and 2nd
35 employees 2nd shift	
25 employees 3rd shift	
100 Total	

**Guesstimates**

1st/2nd Regular	1st/2nd OT	3rd regular	3rd OT	
\$41.50	\$62.25	\$45.65	\$68.48	Hourly rate
75	75	25	25	Employees
40			8	Hours per week
48			48	Weeks
\$5,976,000	\$4,792,500	\$2,120,000	\$657,600	Wages
				Subtotal
				\$10,617,360 Total S & W Exp.

**Salary Accruals**

Existing	\$3,079,034.40
New	\$2,252,952.00

Labor Savings	\$2,848,560	By eliminating 3rd shift
Salary Accruals	\$826,082	By eliminating 3rd shift
Reduced Scrap	\$270,000	Goal stated in RFP
<b>Total Savings</b>	<b>\$3,674,642</b>	

Profit Targets

% Profit	\$ Profit	Total Cost
10%	\$340,384	\$3,256,974
15%	\$510,576	\$3,086,782
20%	\$680,768	\$2,916,590
25%	\$850,960	\$2,746,398

Recommend a 15% profit target.