REPORT ON SECONDARY MANUFACTURING OPPORTUNITIES FROM IN-PUTS TO THE MOBILE/MODULAR HOME MANUFACTURING INDUSTRY.

A joint Project
with...........

Atlantic Area Consultants Ltd.,
108 Prospect Street,
Fredericton, N. B.

and

Department of Regional Economic
Expansion,
Fredericton, N. B.

March 12, 1974

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SECTION 1

TERMS OF REFERENCE.

The growing volume of activity in housing, especially mobile home plants, stimulated discussions on the sources of in-puts to the industry. The preliminary results of discussions supported initiation of this project.

The outline of Tasks to be completed, as set out in the Agreement dated January 21, 1974; between the Department of Regional Economic Expansion and Atlantic Area Consultants Ltd., are as follows:

"To review the Mobile/Modular home industry in the Atlantic Region to identify potential linkages leading to the development of secondary manufacturing opportunities in New Brunswick, such as cabinets, draperies, window, and other supply component facilities, and to visit the major mobile home manufacturing centre in the United States at Elkhart, Indiana to determine the trends in the industry concerning new products, design, plant layout and interplant linkages".

and

"To prepare and submit a report in the required form and manner.....on or before March 15, 1974".

The Tasks will be completed jointly by the Consultant and a DREE Officer.

SECTION 11

METHOD OF ANALYSIS AND IDENTIFICATION OF HOUSING PLANT IN-PUTS

The following Order of Work was followed during the assignment:

1.1 A questionaire was designed, covering all major elements of a mobile and modular home. This questionaire was tested by interview with two manufacturers, and certain changes made to revise the breakdown of the elements.

This questionaire was used for recording information at each manufacturing plant, and as a guide outline in setting up selected manufacturing plants to be visited in the Elkhart area, both manufacturers and component suppliers.

1.2 Calls were made on all principal home manufacturers in the Atlantic Region. The Industries are listed in Appendix 11. Component Home manufacturers were not included. The modular plant at Stephenville, Newfoundland was not included because of its isolated market area. The planned new mobile home plant for Pyramid Mobile Homes Ltd., at Argentia, Newfoundland was included in the projections of demand for materials and components.

13. The information from the questionaires was summarized, and the items supplied from outside the region were reviewed to determine the potential areas of further investigation for new manufacturing opportunities.

1.4 The principal source(s) of supply; (Companies or Agencies) quantities purchased; landed costs; and trends in changes of materials and/or costs; for each major material in-puts were identified.

1.5 The exercise of elimination of potential new secondary manufacturing opportunities was completed, using the linkage charts shown in Section 1V.

.../2

1.6 The Product Supply Linkage Charts were further developed, (to the stage as presented in Section IV), including U.S. sources which control or influence major material in-puts to the industry in the region; and to identify the Canadian Supply linkage.

1.7 A Study Trip was organized to cover manufacturing and supply plants for the mobile/modular home industry in Southern Michigan, Northern Illinois, and Northern Indiana. From calls made on Manufacturers, Fabrications, and Sub-Contractors in the industry; information was obtained on:

-recent changes in design, production, and materials used in the manufacture of mobile/modular homes, e.g. mouldings, bathroom units, insulation, building board, electrical components, etc.

-up-dated technology in the manufacture of major material in-puts, e.g. fibreglas bathroom units, fibreglas sinks, wall panelling, heating furnaces, furniture, plumbing material extruded vinyl siding and mouldings, aluminum siding, shutters, etc.

-linkages for manufacturing technology, licences to manufacture, product ranges to fit into diversified plant production utilizing common materials, and the extent of control exercised over each major in-put (the areas of opportunity open to regional development).

1.8 "After-analysis" visits were made to select large and influential manufacturers in the Atlantic area to determine if the conclusions reached as a result of project work to date were in line with their planning. At the same time, we checked the main in-puts on the list of secondary manufacturing opportunities with these industry leaders. No changes were required in the original lists, and the preliminary conclusions and recommendations were found to be parallel to the industrial intelligence of these industries.

These "after-analysis" calls were made on....

- -Enterprise Foundry Limited, Sackville, N.B.
- -Kent Homes Limited, Debert, N.S.
- -Pyramid Mobile Homes Limited, Fredericton, N.B. (subsidiary of Beatrice Foods, Inc. U. S.)
- -New Yorker Boiler Limited, Sussex, N. B.
- -Amherst Woodworkers Limited, Amherst, N.S.
- -Indal Industries Limited, Moncton, N. B.
- -Lockhart Woodworkers Limited, Scoudouc, N. B.
- -Polymer International Limited, Truro, N. S.
- -Crossley-Karastan Carpets Limited, Truro.
- -Buckingham Carpets Limited, Springhill, N. S.

The latter three calls were to support the preliminary conclusion on construction polyethalyene supply and supply of carpets, (both high grade, and needle punched)

1.9 The requirements for the Industry in the Atlantic Region were projected, as shown on Table 1, Sectionlll.

2.0 Priorities were determined for further implementation work.

SECTION 111

PRESENT AND PROJECTED PRODUCT REQUIREMENTS

The information in Table 1 is made up of:

(a) * 1974 requirements for Mobile/Modular plants in production, at delivered cost.

(b) 1975 requirements bases on 2% increase over 1974, plus requirements of new plant of Pyramid at Argentia, Newfoundland (mobile) and new plant of Lynwood, Plaster Rock, N. B. (modular)

(c) 1976 to 1979, projected at increase of 2% per year for mobile plant production, and 7% per year for modular plant production. These projected increases are based on trends established in the United States, and are less than the projections being considered by regional manufacturers.

*their planned production.

SECTION 111

PRESENT AND PROJECTED PRODUCT REQUIREMENTS

TABLE 1

	Products Description	1974 Cost at User Plant	1975
1.	Mobile Home Frames, incl. under carriage	4,905,558	5,413,669.
2.	Aluminum & Vinyl Siding (3 types)	2,409,650.	2,606,605.
3.	Insulation-Fiberglas (3 °Weights)	1,357,850.	1,519,874.
4.	Electric Wiring Components (Material Only)	675,750.	760,927.
5.	Electric Ranges	1,265,625.	1,412,333.
6.	Refrigerators	1,212,000.	1,343,240.
7.	Plastic Plumbing Pipe & Fittings (DVW)	247,875.	277,280.
8.	Plumbing Fixtures-Tub/Shower/Sink/Closet	724,100.	796,957.
9.	Furnace-Oil	2,019,350.	2,256,514.
10.	Heating Ducts-Tin.	273,475.	308,863.
11.	Hot Water Tanks	432,000.	492,970.
12	Roof Trusses (Mobile SW only)	864,240.	958,324.
13.	Cabinets: Upper & Lower Kitchen, Bathroom Vanity and Counter Tops.	1,900.750.	2,130,077
14.	Medicine Cabinets with Mirrors	60,645.	67,901.
15.	Kitchen/Dinette Sets	484,500.	528,190.
16.	Laminated Tables-Coffee/End/Side/etc.	383,600.	419,272.
17.	Upholstered Chesterfields & Chairs	1,233,000.	1,341,660.
18.	Bed, Springs, & Mattresses.	319,200.	347,984.
19.	Draperies	256,500.	279,630.
20.	Dressers & Chests of Drawers	433,200.	472,264.

1976	1977	1978	1979
5,513,742.	5,624,116	5,736,598	5,841,329.
2,701,496.	2,802,278.	2,907,328.	3,017,910.
1,874,688.	1,953,307	2,036,378.	2,124,198.
789,785.	830,133.	862,351.	896,315.
1,459,883.	1,509,736.	1,570,115.	1,625,165.
1,391,835.	1,438,557.	1,488,395.	1,538,907.
287,893.	298,857.	310,314.	322,578.
833,556.	872,334.	913,435.	957,014.
2,271,855.	2,352,759.	2,437,764.	2,527,126.
322,073.	335,830.	350,483.	365,985.
500,012.0	518,061.	536,961.	556,765.
977,490.	997,040.	1,016,980.	1,037,319.
2,211,822.	2,298,042.	2,388,716.	2,484,451.
70,240.	72,696.	75,274.	78,464.
538,753.	549,528.	560,518.	571,728.
427,657.	436,210.	444,934.	453,832.
1,368,493.	1,395,862.	1,423,799.	1,452,254.
354,940.	362,038.	369,278.	376,663.
285,222.	290,326.	296,132.	302,054.
481,709.	491,343.	501,169.	511,192.

		1974	1975
21.	Windows-Aluminum (Mobile only)	1,663,000.	1,846,260.
22.	Windows-Double Hung-House Type	1,725,000.	1,995,750.
23.	Combination Doors-Aluminum	222,300.	242,360.
24.	Wood Doors-Solid Core/Hollow Core	153,900.	155,946.
25.	Metal Doors.	378,400.	433,028.
26.	Mouldings-Vinyl	479,100.	563,086.
27.	Shutters-Aluminum	72,960.	76,487.
28	Shutters-Vinyl	141,825.	166,752.
29.	Industrial Fasteners	380,700.	428,358.
30.	Vent Hoods-Exhaust Fans.	424,144.	432,626.
		27,100,197.	

1976	1977	1978	1979
1,883,185.	1,920,848	1,959,264	1,998,449.
2,135,452.	2,284,933	2,444,878	2,616,019
247,287.	252,232.	257,276.	262,421
159,065.	162,246.	165,491.	168,888.
487,628.	521,761	558,284.	597,363.
591,098.	620,843.	652,438.	694,215.
78,016.	79,576.	81,167.	82,798.
178,424.	190,913.	204,276.	218,575.
443,145.	458,653.	474,309.	491,368.
441,278.	449,544.	458,535.	467,705.

RECONCILIATION OF VALUE
OF HOUSING IN-PUTS.

There are broad variances between the Bills of Materials for Mobile Homes, Double Wide Mobile Homes and Modular Homes.

In this report, the production for 1974 includes 5,700 mobile homes, and 1,875 modular homes.

A careful review of cost data shows the following costs:

1. Mobile Homes, production of 5,700 units, with average ex-plant selling price of $7,800. each.....@ 65% Materials Cost, incl furniture.

   Cost of material in-puts. Est. $28,899,000.

2. Modular Homes, production of 1,875 units, with average ex-plant Selling Prices of $14,200. each....@ 69% Materials Cost, no furniture... Est. $18,370,250.

   TOTAL $47,269,250

Total Materials In-puts included in the Secondary Manufacturing Opportunities Preliminary Lists in Table 1 (1974) $27,100,197.

Representing 57.3% of total estimated Materials in-puts.

SECTION 1V

PRODUCT SUPPLY LINKAGE CHARTS

(Manufacturers)

The following information includes in-puts to the Mobile/Modular plants listed in Appendix 11.

1. PRODUCT SUPPLY LINKAGE
MOBILE HOME FRAMES INCL.
UNDER-CARRIAGE.

Regional	60%	Industrial Machinery & Iron Ltd., Industrial Park, Fredericton, N. B.
	7%	Frameco Ltd., Sussex, N. B.
Canada	6%	Aurora Tool Mfg. Ltd., Oakville, Ontario axles
U. S.	8%	Dexter Axle Co. Ltd., Elkhart, Ind. axles

Conclusions:

Local manufacturers have been established, based on technology and imports from Aurora and Dexter.

Await increased demand before developing additional local production.

2. PRODUCT SUPPLY LINKAGE
ALUMINUM SIDING (VINYL SIDING)

Regional		
75% Al.		-No supply, 7 Mobile Home Manufacturers produce their own requirements <u>from coil stock</u>, supplied by Alcan Building Products Ltd., Scarborough, Ont. J. L. Plastics Ltd. Burnside Industrial Park, Dartmouth, N. S.
Canada	(85%)	-Hunter Douglas Ltd., 2591 T.C.H. Pointe Claire, Quebec.
25% Al	(12%)	-Building Products Ltd., LaSalle, Quebec.
	(100%) Vinyl	-Daymond, Division of Redpath, Industries Chatham, Ont. -Kaiser Aluminum, Scarborough, Ont. -Reynolds Aluminum, Siding Division, Weston, Ontario
U. S.		-Howmet, Elkhart, Indiana (for up-dated technology refer to Howmet Corp. Greenwich, Conn.) -Other linkage through subsidaries of: Kaiser, Alcan, Reynolds.

Conclusion:

Propose new regional manufacturing plant. Contact Canadian Suppliers first. Follow up U. S. linkage as required. Add full line of other aluminum products.

Combine Vinyl with mouldings.

3. PRODUCT SUPPLY LINKAGE
INSULATION-FIBREGLAS

Regional		No Supply
Canada	60%	Fibreglas, owned by Duplate Canada Ltd., (Owned by Owens, Illinois, Corning Inc.)
	40%	Canadian Johns Manville Ltd., Port Credit/Port Union, Ontario
U. S.		Main linkage to Owens Illinois, Corning.

Conclusion:

Opportunity rests with possibility of European manufacturer establishing manufacturing in region-providing raw material allocation can be arranged.

4. PRODUCT AND SUPPLY LINKAGE
ELECTRICAL WIRING COMPONENTS

Regional		Supply through Distributors
Canada	85%	CGE Ltd.
	15%	Northern Electric Ltd.
U. S.		Not checked

Conclusion

Opportunity lies in assembly of small components into units of "electrical harness" for supply to mobile and modular home manufacturers, providing volume/profit ratio can be reached and maintained.

5. PRODUCT SUPPLY LINKAGE
ELECTRIC STOVES

Regional	41%	Enterprise Foundry Ltd., Sackville, N. B.
Canada	24% 35%	Admiral C.G.E.
U. S.		Not checked.

Conclusion:

Verify present regional supply/demand ratio with Enterprise.

6. PRODUCT SUPPLY LINKAGE REFRIGERATORS.

Regional		No supply
Canada	24%	Admiral
	21%	Westinghouse
	20%	G.S.W. (McClary or Moffatt)
	13%	Kelvinator.
	22%	CGE.
U.S.		not checked

Conclusion:

Demand supplied by Canadian Manufacturers, but competitive opportunity exists for production of demand in the region- providing production is profitable by additional products such as dishwashers, dryers, ranges, etc.

7. PRODUCT SUPPLY LINKAGE
PLASTIC PIPE DVW

Regional		-No supply
Canada	5%	Emco
	80%	D.C. Hawkins Ltd, Toronto (U.S.Import)
	15%	Dow Plastics Ltd, Montreal.
U. S.		Not checked

Conclusion

Opportunity for existing plastic company to manufacture regional requirements-note increased acceptance in lieu of metal.

8. PRODUCT SUPPLY LINKAGE
PLUMBING FIXTURES-STEEL ENAMEL*

Existing.

Regional — No Supply

Canada

78%	D.C. Howkins Ltd. Toronto (U.S. Imports)
17%	Crane Canada Ltd., Montreal
5%	American Standard Products (Canada) Limited Toronto.

Potential
Moulded Fiberglas
Units. — (owned by American R diator, New York).

Source of new technology

Canada Cyanamid, Montreal

Spiroco Ltd.,
Sarnia, Ontario

U.S.

Glas-Tek Inc,
2002 Middleburg St.
Elkhart, Ind.

The Couroth Co. Inc.,
2400 Greenleaf Ave.,
Elk Grove Village, Ind.

and

Millville, N.J.

Carl Corporation,
503 Commerce Bldg.
Fort Wayne, Ind.

Conclusion:

*Opportunity for regional manufacture of fibreglas moulded units and fixtures, being used by U.S. Housing industry, to meet change in demand for conver ion to these units in the region. Market area protected by freight costs-maximum shipping distance 700 miles.

9. PRODUCT SUPPLY LINKAGE
FURNACES-OIL

Regional		no supply for mobile
	7%	Enterprise Foundry Ltd., Sackville, N. B. -for modular
Canada	24%	Beach Industries Ltd. Smith Falls, Ont.
U. S.	16%	Canadian Coleman Co. Ltd., Toronto (U. S. Imports)
	53%	Gregg Lund Ltd., Toronto, U. S. Imports (owned by Intertherm Inc. St. Louis Missouri) (plant at Harrisburg, Pa) *Head office Wichita, Kansas.)

Conclusion:

If Enterprise, Sackville is not in a position to manufacture, an opportunity exists for a new regional plant. First offer will be made to existing suppliers.

10. PRODUCT SUPPLY LINKAGE
HEATING DUCT

Regional	23%	Enterprise Foundry Ltd., Sackville, N. B.
Canada	12%	Greg Lund Ltd. Toronto
	50%	Ontario Duct Work Ltd. Toronto
	15%	Coleman Industries Ltd., Toronto
U.S.		distance to great.

Conclusion

Opportunity for small fabricator to supply from one or more locations in Atlantic Region.

11. PRODUCT SUPPLY LINKAGE HOT WATER TANKS

Regional	49%	Enterprise Foundry Ltd., Sackville, N. B.
Canada	51%	Greg Lund Ltd., Toronto
U. S.		distance to great

Conclusion:

Opportunity for limited increased production of existing plant or new plant, in combination with other metal products.

12. PRODUCT SUPPLY LINKAGE ROOF TRUSSES.

Regional	40%	Industrial Machinery & Iron Ltd., Fredericton, N. B.
	48%	In-plant production
Canada	12%	Competition from Quebec suppliers substantually eliminated since Industrial Machinery & Iron Ltd., began production.
U. S.		Distance to great.

Conclusion

Supply adequate for demand outside in-plant assembly.

13. PRODUCT SUPPLY LINKAGE
<u>CABINETS.</u>

Regional	85%	Eastland Industries Ltd., Minto, N. B.
Canada	8%	Gregg Cabinets Ltd., Montreal.
	5%	Hanover Kitchen Ltd., Hanover, Ontario.
	2%	Electrohome Ltd., Kitchener, Ontario (special plastic doors)
U. S.		Distance to great.

<u>Conclusion</u>

Demand for choice of supply of solid wood and plastic doors with more design choices.

14. PRODUCT SUPPLY LINKAGE MEDICINE CABINETS.

Regional		No supply
Canada	21%	Glendale associated plant, St. Joseph de Beauce, Quebec.
	34%	Miami Carey Ltd., Rexdale, Ontario.
	35%	Manhatten Products Ltd., Montreal
	10%	Leigh Metal Ltd., London, Ontario
U. S.		Distance too great. -for systems and design refer to: Triangle Home Products Ltd., Chicago, Ill.

Conclusion.

Opportunity for local production-in combination with metal fabricated products.

15. PRODUCT SUPPLY LINKAGE
KITCHEN/DINETTE SETS

Regional		no supply
Canada	40%	Ideal Mfg. Ltd., Montreal.
	36%	Style Craft Ltd., Montreal.
	8%	Star Chrome Mft. Ltd., Toronto.
		Artmetwork Ltd., Montreal
U.S.	16%	Stewart Furniture Inc., High Point, N. Carolina

Conclusion

Opportunity for regional production in combination with laminated tables.

16. PRODUCT SUPPLY LINKAGE
LAMINATED TABLES.

Regional		no supply
Canada	40%	Ideal Mfg. Ltd., Montreal
	36%	Style Craft Ltd., Montreal
	8%	Artmetwork Ltd., Montreal.
U.S.	16%	Stewart Furniture Inc., High Point, N. Carolina

Conclusion

Opportunity for regional production in combination with kitchen/dinette sets.

17. PRODUCT SUPPLY LINKAGE
UPHOLSTERED FURNITURE

Regional		No supply
Canada	41%	Biltmore Furniture Mfg. Ltd. Montreal.
	26%	Barrymore Furniture Co. Ltd., Toronto.
	–	House of Braemore, Downsview, Ont.
	11%	Kilgour Furniture Ltd Beauharnois Que.
		Sklar, Div of Stancor Whitby, Ont.
U. S.	21%	Stewart Furniture Inc., High Point, N.C.

Conclusion.

Demand for upholstered furniture in the region with a freight advantage in the regional market.

18. PRODUCT SUPPLY LINKAGE
BEDS, SPRINGS, & MATTRESSES

Regional	100%	Atlantic Sleep Products Ltd., Scoudouc, N.B.
Canada		regional advantage for freight cost (bulk)

Conclusion

Demand filled in region.

19. PRODUCT SUPPLY LINKAGE
DRAPERIES.

Regional	37%	Ball Enterprises, New Maryland, N. B.
Canada	63%	regional fabrication, either in-plant or custom work.

Conclusion

Opportunity for additional customs work, expansion of existing plant or new operation.

20. PRODUCT SUPPLY LINKAGE
DRESSERS & CHESTS OF DRAWERS.

Regional		no supply
Canada	52%	South Shore Industries Ltd., St. Laurent, Que.
	27%	Kilgour Furniture Ltd., Beauharnois, Quebec.
		Sklar, Div of Stancor Whilby, Ont.
U.S.	21%	Stewart Furniture Inc., High Point, N.C.

Conclusion.

Opportunity for manufacture of"price" line along with other types of wood and laminated furniture.

21. PRODUCT SUPPLY LINKAGE
 WINDOWS-ALUMINUM

Regional		no supply of mobile home types.
Canada	100%	Wickham Industries Ltd., Drummondville, Que. Indel Limited, Weston, Ont.

Conclusion

Opportunity for new regional manufacturing plant.

22. PRODUCT SUPPLY LINKAGE
WINDOWS HOUSE TYPE

Regional	100%	Lockhart Woodworking Ltd., Scoudouc, N. B.
		regional distributors.
		Eastern woodworkers Ltd., New Glasgow, N. S.
Canada		extensive list of Canadian manufacturers.

Conclusion.

Demand adequately supplied in region.

23. PRODUCT LINKAGE CHARTS
COMBINATION DOORS-ALUMINUM

Regional		no supply of mobile home type.
Canada	100%	Wickham Industries Ltd., Drummondville, Ont. Indel Ltd., Weston, Ont.

Conclusion.

Opportunity for new regional manufacturing plant along with aluminum windows.

24. PRODUCT SUPPLY LINKAGE
<u>SOLID CORE/HOLLOW CORE DOORS</u>.

Regional	72%	Amherst Woodworkers Ltd., Amherst, N. S. and affiliates regional distributors.
Canada	28%	extensive list of manufacturers

<u>Conclusion</u>

Demand being supplied in region.

25. PRODUCT SUPPLY LINKAGE
METAL DOORS-BIFOLD.

Regional		no supply
Canada	10%	Valco Ltd., Cap de Madelaine, Quebec.
	85%	Hunter Douglas Ltd., Montreal.
	5%	Leigh Metal Ltd., London.

Conclusion

Opportunity for regional manufacture along with other metal products.

26. PRODUCT SUPPLY LINKAGE EXTRUDED VINYL MOULDINGS.

Regional		no supply regional distributors.
Canada	5%	Deymond, Div. of Redpath, Chatham, Ont.
	11%	Canada Gypum Co. Ltd., Toronto.
		-for technology
U.S.		Abitibi owned, Middlebury Moulding Inc., Middlebury, Ind.
	84%	Other U. S. sources

Conclusion:

Opportunity for new manufacture in region and in Canada due to forecast shortage of supply of southern mahogony.

Also opportunity for manufacture of wood mouldings with suitable coating of plastic or laquer.

37. PRODUCT SUPPLY LINKAGE SHUTTERS ALUMINUM

Regional		no supply
	40%	in plant manufacturing approx 40% of volume.
Canada	60%	Alcan, Kaiser, Reynolds, Companies and subsidiaries.
U. S.		Sources of Technology. Howmet Inc., Elkhart, Ind. Riblet Products Corp., Elkhart, Ind.

Conclusion

Opportunity for new regional manufacture along with complete line of mobile home products of aluminum.

28. PRODUCT SUPPLY LINKAGE
SHUTTERS-VINYL

Regional	5%	J. L. Plastics Ltd., Dartmouth, N. S.
Canada	11%	Monsanto Canada Ltd., La Salle, Quebec.
	25%	B.P. of Canada Ltd., Montreal, Quebec.
	59%	Domtar Construction Materials Ltd., Montreal, Quebec.
U. S.		Imported by B.P. (for all modular homes)

Conclusion

Potential opportunity for extension operation with additional extended vinyl products for housing.

29. PRODUCT SUPPLY LINKAGE INDUSTRIAL FASTENERS.

Regional		no supply
Canada	100%	Signode Canada Ltd., Scarborough, Ont. Bostitch Canada Ltd., Montreal. Gang Nail Ltd., Toronto. Triad, Tested Truss.

<u>Conclusion:</u>

Recent DREE offer accepted for new plant at Fredericton.

30. PRODUCT SUPPLY LINKAGE
<u>VENT-HOODS/EXHAUST FANS</u>.

Regional		No supply
Canada	100%	Leigh Metal Ltd., London, Ontario

<u>Conclusion</u>

New manufacturing opportunity along with other metal fabricated products (heating duct)

SECTION V

Selection of Product Priorities for
New Secondary Manufacturing

TABLE 11

Product Description.	1974 $	Primary* Priority	Secondary** Priority	Explanation
. Mobile Home Frames, incl under carriage	$4,905,558.	-	-	Industrial Machine & Iron Ltd., Fredericton Industrial Park, already expanded to produce this product and changes to 14' wides and double wides will change product specifications possible future diversification for an existing industry.
. Aluminum & Vinyl Siding (3 types) with Shutters, Skirting, Soffet & Fascia, [illegible], Patio Covers, Car Ports, Awnings, Door & Window Canopies (volume to be determined).	2,409,650. 214,765.	1		New Plant(s) potential
. Insulation	1,357,850.	2		New Plant Potential-by Company with technology-providing raw material can be allocated to a new plant.
. Electrical Wiring Components (plus added labour 30% est.)	675,750. 202,725.		2	Potential Diversification for Existing plant
. Electric Ranges.	1,765,625.			Produced by Existing plants in region.
. Refrigerators.	1,212,000.	2		Produced by Existing Plants-Outside region. Opportunity for regional manufacturing.

...duct Description.	1974 $	Primary Priority	Secondary Priority	Explanation
. Plastic Plumbing Pipe & Fixtures (DWW)	247,875.		1	Potential diversification for Existing pl nt.
. Plumbing Fixtures Tub/Shower/ Sink/Closet.	724,100.	1		Potential New Plant (New Technology)
. Furnaces-Oil	2,019,350.	1		Potential new plant.
. Heating Duct-Tin.	273,475.		1	Potential Diversification for Existing Plant New Machine Process.
. Hot Water Tanks	432,000.			Produced by Existing Plants.
. Roof Trusses (Mobile SW Only)	864,240.			Produced by Existing Plants.
. Cabinets Upper & Lower Kitchen, Bathroom Vanity and Counter Tops.	1,900,750.	2	2	Potential for New Plant and diversification of Existing Plants.
. Medicine C binets with Mirrors	60,645		1	Potential for Diversification.
. Kitchen/Dinette Sets	484,500.	1		Potential New Plant with mix of cabinets and laminated Furniture.
. Laminated Tables	383,600.	1		In combination with 15 above.
. Upholstered chesterfields and Chairs.	1,233,000.	1		Potential for New Plant.
. Beds, Springs, Mattresses	319,200.			Produced by Existing Plant.
. Draperies.	256,500.		1	Potential for Diversification of Existing Plant (contract manufacturing)

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Product Description	1974 $	Primary Priority	Secondary Priority	Explanation.
20. Dressers & Chests of Drawers	432,200	1		In combination with 15 & 16
21. Windows-Aluminum	1,663,000	1		Potential new plant (consider possible trend of Double Wide Mobile production)
22. Windows-Double Hung-House type	1,725,000			Produced by Existing Plant.
23. Combination Doors-Aluminum	722,300.	1		In combination with 21.
24. Wood Doors-Solid Core/Hollow Core	153,900			Produced by Existing Plant.
25. Metal Doors	378,400.	1		Opportunity in conjunction with other aluminum products.
26. Mouldings.	[illegible]77,100.	1		Potential for new plant, in combination with 2 (assuring replacement of wood imports).
27. See 2				
28. See 2				
29. Industrial Fasteners	380,700.	2		Potential new plant.
30. Vent Hoods, Exhaust Fans.	424,144.	1		Potential New Plant, in combination with 10.

*Primary Priority...developed as a potential for new Plant.

** Secondary Priority...developed as increase in production for existing plant.

SECTION V

Summary of Product Priorities for
New Secondary Manufacturing

TABLE III

Product Description	$ Sales 1974	Priority New Plant	Priority Expansion	Preliminary Capital	Estimates New Jobs.
GROUP "A"					
Aluminum Mobile Home Products.	1,683,360.	1		610,000	74
Vinyl Mobile Home Products. Siding/Mouldings.	1,420,175.	1		600,000	38
Plumbing Fixtures Tub/Shower/Sink/Closet.	724,100.	1		380,000	40
Furnaces-Oil	2,019,350.	1		1,200,000	82
Kitchen/Dinette Sets/Laminated Tables/Dressers/etc.	1,301,300.	1		835,000.	86
Windows-Aluminum (incl. combination doors.	1,885,300.	1		900,000.	84
Upholstered Furniture	1,233,000.	1		700,000	35
Industrial Fasteners	380,700.	1		110,000	18
GROUP "B"					
Insulation Fibreglas type	1,357,850	2		2,400,000.	68
Cabinets (Vanities/Counter Tops of solid wood.	1,900,750	2		840,000	62
Refrigerators	1,212,000	2		1,200,000	40
GROUP "C"					
Plastic Pipe (DWV)	247,875		1	75,000.	15
Heating Ducts (Tin) and Exhaust Fans.	597,619		1	165,000	48
Medicine Cabinets w/mirrors	50,645.		1	45,000	10
Draperies	256,500.		1	45,000	15
GROUP "D"					
Cabinets and Doors-Plastic	300,000 (est)		2	65,000	18
Electric Wiring Components.	278,475.		2	40,000	12
				Total Estimated New Jobs (Direct)	745

SECTION VI

CONCLUSIONS AND RECOMMENDATIONS

1. CONCLUSIONS

1.1 The Opportunities developed in this project for new Secondary Manufacturing of In-Puts to the Housing Industry; offer a minimum potential of an estimated 745 new direct jobs in New Brunswick.

1.2 The continuing Implementation plan requires <u>full time participation</u> by a team of highly qualified personnel, with experience in developing and implementing new manufacturing plants in New Brunswick.

1.3 The time required to Implement these Opportunities, will be 24 to 36 months from the starting date.

1.4 The system to be used will lead to other Secondary Manufacturing Opportunities, e.g. plastic products.

1.5 As each New Manufacturing Operation is developed, natural increases in scope, size, and employment requirements will operate because of demand from the remainder of the housing and construction sectors.

The vertical and horizontal linkages from each operation will further contribute to new manufacturing operations and increased employment.

1.6 Priorities of development should be offered in the industry in the following order:

1. Present Regional Manufacturers,
2. Present Regional Distributors
3. Present Canadian Manufacturers.
4. Present Canadian Distributors.
5. Foreign Manufacturers, in joint venture with 1.
6. Foreign Manufacturers, in joint venture with 3.
7. Others.

2. RECOMMENDATIONS

2.1 It is recommended that this Project be undertaken as a Model Project to be designated as INDUSTRIAL LINKAGE IMPLEMENTATION PROGRAM (ILIP) HOUSING GROUP.

The Systems and Procedures developed and proven in this Program should then be adapted and applied to other Manufacturing Classifications, such as:

Food Group,
Clothing Group.

and thence into various Product Classifications and sub-classifications on priorities to be determined, e.g.

Plastic Products and Components.
Electric Products and Components.
Electronic Products and Components
Metal Fabricated Products and Components
Metal Stampings.

2.2 It is recommended that the following Order of Work be initiated in the Implementation of the New Manufacturing Opportunities listed under Group - and Group C, Priority 1:

2.21 follow through existing linkage by plant visits, to determine final specifications of product, cost of manufacturing, sources of raw materials, labour requirements, (training and skills), break-even size, and potential profitability.

2.22 obtain general committment from potential developer.

2.23 determine size of plant, scope of Capital Costs, and Working Capital Requirements.

2.24 submit up-dated marketing and manufacturing information to prospective manufacturers.

2.25 prepare complete final project Implementation Report including:

- Product Specifications,
- Plant Layout and Production Flow Diagram
- Projected Operating Statement for Five Years.
- Pro-Forma and Projected Balance Sheets.
- Cost Data
- Jobs Supplied, and Training Requirements.

2.26 decision on final implementation undertaking.

2.27 any other assistance required in implementation of operations.

2.3 It is recommended that the following Order of work be initiated in the Implementation of New Manufacturing Opportunities listed in Group B and Group D Priority 2:

2.31 organize meetings with, and visit plants of, the leading potential developers of these product manufacturing facilities, being Companies now....
manufacturing the products elsewhere.
distributing the products.
manufacturing related products.

2.32 determine size of additional plant space, scope of Capital Costs to be added, and additional Working Capital requirements.

2.33 obtain general committment from potential developer

2.34 prepare up-dated marketing and manufacturing data and cost information.

2.35 prepare complete project implementation Report including:

-information as in 2.14, but in parallel to existing facilities.

2.36 decision on final implementation undertaking.

2.37 any other assistance required in implementation of the operations.

2.4 It is recommended that these projects, under the priorities recommended in SectionV.Table 111 be undertaken at the earliest possible date.

2.5 It is recommended that some of these products be used as training projects for Industrial Development in order to provide a basis for increasing the impact of DREE in implementation of new manufacturing projects in New Brunswick*

2.6 There are two principal materials being introduced into the Canadian and US markets which are forecast to have a major impact on the housing industry and the immediate future. These are the steel Mobile Home Truss by Dofasco, and the "Kogwal" material, evidently widely accepted in the industry, because of its superior insulation qualities.

We recommend an initial investigation of both as possible manufacturing opportunities, in order to obtain early priority.

*Industrial Development staff under DREE leadership and participation, including Provincial Government organizations.

2.7 The data and intelligence obtained during the course of this assignment has provided some further insight into the future trends of the industry. The total plant capacity of Mobile Home Manufacturers in the Atlantic Regions should be reviewed in relation to the market demand for the next five years.

It is recommended that a "Report on Manufactured Homes in the Atlantic Provinces" be prepared, covering such factors as:

- trends in consumer preference for higher quality standards and larger units-Mobile Homes.
- trends in consumer preference for Double Wide Mobile Homes.
- new requirements for consumer financing
- new requirements for Housing sub-divisions, regulations, design, and financing.
- clarification of Zoning By-law on definition of Double Wide Mobile Homes.

APPENDIX 1

A WORKING MODEL

OIL FURNACES- 50,000 to 100,000 BTU's

INTRODUCTION

The information below is provided to illustrate a Working Model of the Implementation Program for a New Manufacturing Plant to supply Oil Furnaces.

1. OBJECTIVE

To establish a new manufacturing plant to manufacture oil furnaces of from 50,000 to 100,000 BTU's; to supply market for Mobile Homes, Double Wide Mobile Homes, and Modular Homes; in Eastern Canada, and Northeast United States; plant to be located in New Brunswick....

or

...provide the "team development" assistance required for an existing manufacturer to expand present production facilities to supply this demand.

2. MEASURING THE DEMAND

This task has been completed. The demand has been verified throughout the user sector of the industry. This demand has been confirmed by the manufacturers, including the potential plant for expansion.

3. TRACING THE SOURCE(S) OF SUPPLY

This task has been completed.

4. ESTABLISHING THE COSTS (SELLING PRICES)

This task has been completed.

5. THE STRATEGY

The following order of work is recommended to accomplish the essential steps in the implementation strategy.

1. visit the Canadian manufacturers in the supply chain at present, to determine their interest in developing a new plant in New Brunswick.

2. visit the largest Distributors in the supply chain, for same purpose, have them arrange visit to US plant.

3. visit the manufacturing plant (in US) and obtain manufacturing costs, capital costs for new plant, production system, labour skills, and all costing information essential to implementing the new plant.

4. make offers and undertake negotiations as necessary at that time (which may include joint ventures) for implementation.

6. FINAL IMPLEMENTATION

When the "intent to implement" is registered, the Companies in the supply chain will move to protect their volume. The time required to effectively establish an implementation date, and set time deadlines will require continuing participation by the implementation team over a period of 12 to 18 months.

APPENDIX 11

LIST OF MANUFACTURERS IN MOBILE/MODULAR

MANUFACTURING (1974)

		1974 Production	
Pyramid Mobile Homes Ltd., Industrial Park, Fredericton, N. B.		1,500	MO
Glendale Homes Ltd., Sussex, N. B.		1,600	MO
M M H Prefab Ltd., Sussex, N. B.	(new plant under construction)	400	MO
Modular Structures Ltd., Grand Bay, New Brunswick		200	MO
Kent Homes Ltd., Saint John, New Brunswick _ plants at Debert, N.S. and Buctouche, N.B.		1,175	MO
Instant Housing Ltd (Neonex) Scoudouc, New Brunswick.	(new plant under construction)	400	MO
Bendix Systems Ltd., Amherst, Nova Scotia		1,200	MO
Moduline Ltd., Amherst, Nova Scotia	(new plant under construction)	600	MO
Springhill Homes Ltd. Debert.		500	MO

LIST OF MANUFACTURERS VISITED IN TRI-STATE AREA

NEAR ELKHART, INDIANA

1. Elkhart Chamber of Commerce,
   S. Main St.,
   Elkhart.

2. Hampton Homes Inc.,
   Edwardsburg, Mich.

3. Herrli Industries Inc.,
   2851 Oakland Avenue,
   Elkhart.

4. Howmet Corporation,
   610 Wildwood,
   Elkhart.

5. Vemco Buildings Inc.,
   Jackson Blvd.
   Elkhart.

6. New Yorker Homes Corp.
   751 Collings Road,
   Elkhart.
   (owned by Beatrice Foods Inc.,
   as is Pyramid at Fredericton)

7. Guerdon Industries Inc.,
   1810 Lusher Avenue,
   Elkhart.

8. Richardson Homes Corp.,
   2421 S. Nappanee St.,
   Elkhart.
   (owned by Southwest Corp)

9. Middlebury Moldings Inc.,
   U. S. Hwy. 20.
   Middlebury.
   (owned by Abitibi, Canada)

10. Metaline Products Inc.,
2625 Middlebury St.,
Middlebury.

11. Pine Hills Mobile Home
Sub-Division,
RR # 2,
Bristol

12. Skyline Corp.
Buddy Division,
Elkhart.

13. Glas Tek Inc.,
Division of Riblet Industries
Middlebury.

14. Coachman Homes Inc.,
Middlebury.

15. Elixer Industries,
Industrial Parkway,
Elkhart.

16. Elkhart Rubber Works
Oakland Avenue,
Elkhart.

17. Indiana Plastics Inc.,
Industrial Parkway,
Elkhart.

18. Federal Die Casting Inc.,
2222 North Elston,
Chicago.

19. Copeland Systems Inc.,
2000 Spring Road,
Oak Brook.