

## Intangible Factors Influencing the Choice of Alternative Facilities

The following list of factors include those most commonly considered when evaluating alternative facilities plans for other than economic reasons. These are intended to be used with the weighted-factor method of evaluation as applied on RMA Working Forms 170 and 173.

In truth, each factor will affect costs, but in such a nonfinite or imprecise manner that estimates made for them would be misleading.

From this list, you can select those that are relevant to each particular project. Not all factors will be used; usually, some 8 to 20 factors are selected. Other factors not listed may be added to those selected for special projects. More frequently, two or three factors will be combined. Even more frequently, the wording of the factors and their descriptive explanations will be changed to make them more directly applicable to the specific project at hand. The factors must be made explicit and be clearly understood; otherwise, the weighting and rating are inclined to be cursory, inaccurate, and unreliable – all under the false guise of quantified objectivity.

Planners should note that the evaluation of alternative plans occurs several times in most projects, and that the factors are likely not to be the same each time.

### A. *FACTORS IN VOL VING NON-COMPANY PEOPLE*

1. *Compatibility with Legal Controls:* The extent to which the facilities meet or comply with zoning regulations, building codes, waste control, environmental protection, pollution standards, labor requirements, and related legal considerations.
2. *Appearance, Promotional Value, Public and Community Relations:* The contribution of the facilities to the general "attractiveness" of the plant and company, to potential employees and stockholders, to the company's reputation in the community, to its respect in the trade or with customers, and to its national/international image.
3. *Service to Customers:* The ease or extent of giving effective service to customers – delivery of right items when needed.
4. *Ease of Distribution:* The ease or effectiveness with which products can be distributed to warehouses, jobbers or direct to customers.
5. *Freedom from Interfacing Negotiations; Dependency on and Delays by/with External Agencies:* The degree to which the alternative is unencumbered by required peripheral negotiations, like rerouting of public roads, intersections, access entrances or exits, stoplights; by similar changing of railroads, airport or heliport, bridges, drainage, easements, restrictive covenants; and by clearances with area development agency, flood control, regional planning commission, city hall... (See also # 16)

B. *FACTORS INVOLVING BUSINESS MANAGEMENT*

11. *Ability to Meet Capacity or Requirements:* How well the facilities actually meet the planned needs or output wanted from the installation and how well they meet the performance objectives or aims.
12. *Opportunity for Profit Growth:* How good does the opportunity for profit growth appear to be when considered against total investment, potential growth in sales, resale values, etc.
13. *Fit with Company Organization Structure:* The degree to which the facilities match or meet the existing, planned or desired organization structure.
14. *Management and/or Administrative Attention:* How well the proposed plans free management from periodic reviews, checks and attention-requiring administrative approvals.
15. *Effectiveness of Communications or Procedures:* The ease or effectiveness of operating the planning-and/or-control systems or of transmitting information clearly and on time.
16. *Speed of Implementation:* The speed or quickness with which the proposed plan can be executed and brought into a practical state of operation – considering company-controlled delays, interdivisional negotiations, sequential dependencies, protracted approvals by managers... (See also #5)

C. *FACTORS RELATING TO OPERATIONS*

21. *Freedom from Disruption during Initial Implementation:* The ease of executing or installing the plan from the standpoint of downtime, disruption to operations, inconvenience, mess and confusion. (See also #45)
22. *Effectiveness of Operations:* The effectiveness with which the facilities aid, serve or support the producing operations to attain their full potential, including handling/transport, storage, tools, scrap/waste and planning/control facilities.
23. *Flow of Material(s) Effectiveness:* The effectiveness of the sequencing of working operations or steps – without unnecessary backtracking, cross flow, transfers, long or irregular hauls-of "materials" being processed. (See also #33)
24. *Control of Quality:* The ease of controlling the desired level(s) of quality in the facilities planned. Example: vibration problems with delicate machinery.
25. *Working Conditions and Employee Satisfaction:* The extent to which the facilities contribute to a pleasant place to work and to freedom from inconveniences, awkwardness and disruptions for employees. Feelings of employees that they are segregated or disadvantaged can be caused by the arrangement of facilities.

26. *Effective Use of Employees:* The ease of available labor to use the facilities, the freedom from costly training, and the features provided by the facilities to aid the effective utilization of employees.
27. *Maintenance Problems and Costs:* The extent to which the facilities will benefit or assist maintenance work, will increase the costs and problems of facilities maintenance, or will cause disruptions/interferences with periodic and day-to-day equipment repair, building modifications, utility adjustments and service, and yards, grounds and janitorial care.
28. *Ease of Supervision and Management Control:* The ease for supervisors or managers to direct and control the operations and/or facilities for which they are responsible.

D. *FACTORS RELATING TO PHYSICAL CONSIDERATIONS*

31. *Utilization of Natural Conditions, Existing Buildings or Surroundings:* The extent to which the facilities take advantage of, or capitalize on, the natural conditions of the site, the land area, physical surroundings, existing building structure(s), and neighboring areas.
32. *Utilization of Space and Equipment:* The extent to which process machinery, supporting and service equipment, and space available are used, particularly those facilities directly related to processing.
33. *Effectiveness of Materials Handling and/or Transport Facilities:* The practical ability of the handling/transport equipment, containers/transport units to move materials easily and effectively into, through, and out of the facilities planned, including freedom from traffic congestion and from delays to emergency vehicles. (See also #23 and #36)
34. *Effectiveness of Storage Facilities:* The adequacy, suitability, accessibility, flexibility, reliability, security, and ease of control of the facilities to hold or store materials, parts, products, supplies, returns, service parts, repairs...
35. *Effectiveness of Integration of Utilities and Auxiliary Services:* The adequacy, suitability, accessibility, flexibility, reliability, freedom from hazard, and ease of servicing the utilities, auxiliary service lines, drainage/flood control, sprinklers, heating, ventilating, and air conditioning.
36. *Safety and Housekeeping:* The effectiveness of the facilities in preventing or deterring accidents, avoiding risk or damage to employees, materials or facilities, and contributing to the general cleanliness of the plant and site. Adequate aisle/road widths, access to safety doors and equipment...
37. *Plant Security and Theft:* The ease and reliability of safeguarding company property or security-classified information, and of controlling theft or pilferage.
38. *Conservation of Energy and Accommodation to Varying Sources:* How well the proposed plan conserves energy (fuel, cool air, heat losses, lost/waste power) and how well it can adjust to changes in fuels, power, energy-recovery opportunities, and resource control regulations.

E. *FACTORS RELATING TO FUTURE CHANGE*

41. *Compatibility with Long-range Considerations*: Degree to which the proposal (or alternative plan) fits in with the longer-range logical use or development of land, buildings, machinery and equipment, especially with any approved master site plan and future facilities development plans for intermediate stages of plant growth – including known or anticipated plans of city or regional planning agencies, area development groups, highway commissions...
42. *Ease of Future Expansion*: The simplicity or ease of extending the space employed, and of increasing or adding to all the existing facilities.
43. *Adaptability and Versatility*: The ease of accommodating changes (without major rearrangement of facilities) in product designs, sales volumes, processes *or* methods, procedures, or timing.
44. *Flexibility of Layout and Other Facilities*: The ease of physically rearranging the facilities to accommodate changes in product or materials, quantities, processes, supporting services, seasonal variations, or customer delivery requirements.
45. *Ease of Rehabilitation and Installation*: The extent to which the facilities ease the confusion, disruption, and interruptions to operations and work force when future changes in or expansion of the facilities are being made. (See also #21)
46. *Protection against Physical Hazards*: Ability to face and respond to physical disasters like fires, floods, tornados, neighboring hazards, and the like, other than those changes considered under #43 and #47.
47. *Continuity of Operations*: Ability to maintain operations of the plant and deliveries (shipments) under varying and unforeseen external or internal conditions and circumstances (disorders, riots, work stoppages...)

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