

6. TOOLS FOR LOWERING COSTS

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INTRODUCTION

Environmental protection needs and expectations are continuing to grow, while the resources available to meet those needs and expectations are increasingly constrained at all levels of government. Federal, State and local governments and the private sector are exploring the use of more efficient, effective, and innovative solutions to help address these major challenges. They are aggressively looking for and creating ways and opportunities to lower environmental costs, increase environmental investment, and build environmental capacity by creating partnerships with State and local governments and the private sector to fund environmental needs.

This section presents and evaluates a number of the important mechanisms that these governments are testing and using to lower costs, increase investment, and build capacity through partnerships. It also looks at these mechanisms in terms of their contribution and/or potential contribution to financing environmental needs on a sustainable basis. The mechanisms reviewed in the section vary widely, ranging from specific analytical financial management tools to common-sense financial practices to broad, sweeping, innovative government programs and initiatives.

Some of the tools and initiatives discussed such as refinancing, pollutant loading allocation, and financial capability analysis have been used for years. Others such as cost-benefit analyses, cost-effectiveness analysis, and full-cost pricing are not new, but their use in the environmental arena may be new or growing. Still others such as emissions trading and risk ranking have been used one environmental media or by one level of government, and are their use is now being incorporated in new areas or by new parties. Finally, some such as USEPA's Common Sense Initiative and Project XL are new, innovative, and constantly evolving. But, the one thing that they all have in common is that they represent approaches for lowering costs in the short- and/or long-term) and for helping to address the long-term environmental protection and related financing needs facing the nation.

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* Stars indicate most highly rated mechanisms as described in the Comparison Matrix at the end of the narratives. See Introduction to the *Guidebook* for a description of the criteria used. Ratings of “High”, “Moderate”, and “Low” are for comparison purposes only, as some ratings are necessarily subjective and data are incomplete.

ACCELERATED DEPRECIATION

Description: Accelerated depreciation is an accounting concept which allows writing off the costs of a fixed asset faster than under straight-line or units-of-production depreciation, thus, increasing the depreciation deduction and decreasing taxable income in the early years of an asset's life. This assumes that spreading an asset's cost equally and evenly over each year of its life is not realistic for many assets. Since repair and maintenance costs are usually higher in later years, the recovery of greater costs in earlier years results in a more nearly equal effect on earnings over the asset's useful life. This allows funds to be retained in a business and encourages modernization. Traditional accelerated depreciation methods such as sum-of-the-years digits and double-declining balance focus on the taxpayer's basis (at-risk investment) in the property, the property's useful life, and its salvage value at the end of its life.

The accelerated cost recovery system eliminates useful life and salvage value as concerns by placing property in one of four categories, which set the number of years over which an item's cost may be recovered. The modified accelerated cost recovery system allowed by the federal tax code provides three preset conventions for depreciation in the year property is placed in service and the year of its disposition and defines five methods of figuring depreciation. The general depreciation system (GDS) allows straight line or either of two methods of accelerated depreciation (150% or 200% declining balance) over the recovery periods assigned to eight property classes. The alternative depreciation system has recovery times that generally are longer and it allows only straight line or 150% declining balance. Under the GDS, even shorter recovery periods are allowed for qualified property placed in service on Tribal lands.

Actual Use: Accelerated depreciation is commonly used for tax purposes when it is allowed; however, straight-line depreciation is preferable under some circumstances, such as when there is insufficient taxable income to be offset by the larger, accelerated depreciation deductions.

Potential Use: Private, for-profit businesses could use accelerated depreciation to reduce their income tax liabilities and cut the after-tax costs of investments in environmental equipment.

Advantages: Accelerated depreciation shelters income from taxation by providing larger early-year writeoffs with no reduction of cash flow. Different degrees of acceleration of depreciation are provided by different methods (e.g., more with 200% than with 150% declining balance).

Limitations: The federal tax code specifies numerous limitations too complicated to summarize.

Reference for Further Information: Consult a tax practitioner. See Internal Revenue Service (IRS) Publication 946, *How To Depreciate Property*. Contact IRS, 1111 Constitution Avenue, NW, Washington, DC 20224; Phone: 800-829-1040; Fax: 703-368-9694; Internet: www.irs.ustreas.gov/.

ACTIVITY-BASED-COSTING (ABC)

Description: Activity-based-costing (ABC), a cost accounting methodology, supports activity-based management which portrays an organization as a series of activities related to customer desires and cost. ABC assigns functional costs, direct and indirect, to an organization's activities and traces those activities to the products or services that caused them to be performed. ABC is a basis for strategic management accounting which supports a long-term approach to decision making. ABC may also incorporate Total Cost Assessment (TCA) which uses cost accounting methods and capital budgeting procedures to uncover potentially neglected costs and savings of investments which, when fully accounted for, may yield substantial changes in project profitability. The inventory of costs, savings, and revenues includes indirect, less tangible items typically omitted from project analysis, such as compliance, training, testing, liability, and image. Costs and savings are directly allocated to specific process and product lines instead of being pooled in overhead accounts. Time horizons for calculating profitability are expanded to capture longer term benefits. Profitability indicators capable of incorporating the time value of money and long-term costs and savings are used.

Actual Use: ABC is commonly used in relatively sophisticated cost accounting analyses, especially in the private sector. There are commercially available computer software packages for employing ABC on mainframes, networks, and personal computers.

Potential Use: Activity-based-costing is an aid to business process reengineering, yielding information that may be key in determining whether to restructure or privatize an activity.

Advantages: ABC gives visibility to how effectively resources are being used and how all relevant activities contribute to the cost of a product or service. Such information may be key to making decisions about whether to restructure or privatize an activity.

Limitations: ABC requires extensive data collection as well as the ability to analyze cost data while recognizing cost accounting's difficulties in handling incremental, separable and sunk costs, as well as common costs.

Reference for Further Information: "An Introduction to Environmental Accounting as a Business Management Tool: Key Concepts and Terms", USEPA, Office of Pollution Prevention and Toxics, Mail Code: 7409, Washington, DC 20460, Phone: 202-260-3557; USEPA Full Cost Accounting Program at www.epa.gov/epaoswer/non-hw/muncpl/fullcost/index.htm. "Activity Based Cost from the Perspective of Competitive Advantage" at mijuno.larc.nasa.gov/dfc/abc.html and "An Annotated Bibliography of Activity Based Costing" at dfca.larc.nasa.gov/dfc/abc/abcbib.html; Langley Research Center, NASA.

AMORTIZATION OF POLLUTION CONTROL FACILITIES

Description: The cost of a certified pollution control facility used with a plant or other property in operation before 1976 can be amortized over 60 months. A certified pollution control facility is a new identifiable treatment facility used to reduce or control water or atmospheric pollution or contamination. The facility must do so by removing, changing, disposing, storing, or preventing the creation or emission of pollutants, contaminants, wastes, or heat. It does not include a building and its structural components unless the entire building is a treatment facility. The facility must not significantly increase the output or capacity, extend the useful life, or reduce the total operating costs of the plant or other property. It also must not significantly change the nature of the manufacturing or production processing facility. The facility must be certified by the state and federal certifying authorities, as required by Section 169 of the Internal Revenue Code and the related income tax regulations (Section 1.169). If it appears that all or part of a facility's cost will be recovered from the profit based on its operation, the federal authority will not certify that part of what would otherwise be the amortizable basis. For some corporations, amortization of pollution control facilities is a tax preference item requiring reduction of the amortizable basis by 20% in determining the amortization deduction. If costs are not amortized they can be capitalized and depreciated.

Actual Use: Part VI of Internal Revenue Service Form 4562 is used to claim amortization, including that of pollution control facilities. It appears that use of the deduction is declining as eligible, older facilities have been upgraded, replaced or abandoned.

Potential Use: Deductible amortization can be used to reduce the after-tax cost of pollution control facilities added to older plants to meet or exceed environmental requirements.

Advantages: Amortization over 60 months reduces taxable income for the affected tax years, thereby reducing the real cost of the facility by the amount that income tax is reduced.

Limitations: The amortization provision applies only to equipment used with plants in service prior to 1976. Tax-deductible amortization has no net benefit if there is no taxable income to be reduced by the amortization deduction. Also, amortization is similar to the straight-line method of depreciation rather than accelerated depreciation.

Reference for Further Information: Consult a tax practitioner. See page 53, Internal Revenue Service Publication 535, *Business Expenses* and page 5, Publication 542, *Corporations*. Contact IRS, 1111 Constitution Avenue, NW, Washington, DC 20224; Phone: 800-829-1040; Internet: www.irs.ustreas.gov/.

APPROPRIATE TECHNOLOGY

Description: Appropriate technology refers to a socio-economic movement, its conceptual basis, and the technological tools it employs. The movement promoting the appropriate technology approach to problem solving is based on the idea that the most advanced or sophisticated technology, and even tried and tested conventional technology, may be inappropriate in certain circumstances. The corollary is that a relatively basic or intermediate level of technology reliant on locally available skills, materials, geography, and resources may be better suited to specific situations. This recognizes the fact is that technological alternatives can be more efficient and/or effective in different settings. For example, different technologies are characterized by differing economies of scale, so some work better for larger volumes of production. Also, some technologies require more capital investment, while others need more maintenance. Choices among mixes of characteristics are often possible, yielding a technological approach that is more appropriate to a specific context.

Actual Use: Appropriate technology has been a recognized need for some time in wastewater treatment for small communities. Also, it is being used increasingly in some aspects of agriculture to achieve sustainable productivity with reduced chemical inputs.

Potential Use: Appropriate technology can offer opportunities for cost reduction. Total life-cycle costs can be lowered substantially by selection of a technological approach based on a realistic appraisal of input requirements, pollution consequences, and social implications.

Advantages: Lower-cost technologies might be ignored if an appropriate technology perspective is not employed.

Limitations: The use of the appropriate technology approach can be counterproductive if it is biased against technological improvement.

Reference for Further Information: National Small Flows Clearinghouse, PO Box 6064, Morgantown, WV 26506-6064; Phone: 800-624-8301; Internet address: www.nsf.wvu.edu/. Appropriate Technology Transfer for Rural Areas, University of Arkansas, PO Box 3657, Fayetteville, AR 72702; Phone: 800-346-9140; Internet address: www.attra.org/. National Center for Appropriate Technology, 3040 Continental Drive, Butte, MT 59702; Phone: 800-275-6228; Fax: 406-494-2905; Internet address: www.ncat.org/. Appropriate Technology Institute, W110 Engineering Research Center, Colorado State University, Fort Collins, CO 80523; Phone: 970-491-7189; Fax: 970-491-2729; Center for Renewable Energy and Sustainable Technology, 1200 18th Street, NW, #900, Washington, DC 20036; Phone: 202-530-2202; Fax: 202-887-0497; Internet address: solstice.crest.org/.

BARTER AND PAYMENT-IN-KIND

Description: Barter is the trade of goods or services without the use of money. Payment-in-kind (PIK) is payment with something of the same or similar type or quality to that which was received, but not necessarily an identical article. For example, a PIK provision may provide for the issuance of more of the same type of securities to bondholders in lieu of cash interest payments. PIK has been used in farm programs to compensate participants with agricultural commodities. Barter and PIK are recognized methods of payment in many relatively minor and certain specialized business-to-business transactions. In-kind matching is accepted by numerous federal grant programs. In many localities, sophisticated bartering arrangements which eliminate the limitations of one-one-one trades have been formalized by clearinghouses that provide an organized marketplace. These commercial exchanges charge a commission on each barter transaction and keep records of trade credits accruing to members' accounts. Legally, a barter transaction is defined to be an exchange rather than a sale, which involves money, but since 1982 barter income has been taxable just like cash sales income. IRS Form 1099-B, *Proceeds from Broker and Barter Exchange Transactions* is used to report the value of any cash, property, services, credits, or scrip received from exchanges. (See pages 15-16 of IRS Publication 525, *Taxable and Nontaxable Income*.) However, a business can deduct any costs incurred to perform work that is bartered. Payment-in-kind is used in certain securities transactions.

Actual Use: In 1995, barter was an \$8.4 billion industry including more than 380,000 clients. The following year, perhaps 85 percent of Fortune 500 companies participated in barter transactions. There are approximately 500 barter/trade exchanges and 100 corporate trade companies and brokers.

Potential Use: Barter or payment-in-kind might be used to obtain services or equipment needed for environmental projects or to produce environmentally friendly products.

Advantages: Organizations that do not have sufficient cash flow to make conventional monetary payment feasible may use barter as an alternative to relatively expensive debt which could further drain cash flow. Even financially healthy companies can benefit from preservation of cash flow and the opportunity to transform surplus inventory into needed goods and services.

Limitations: Barter is not a legitimate method of tax avoidance. Some goods and services may not be available on other than a cash payment basis.

Reference for Further Information: International Reciprocal Trade Association, 175 West Jackson Boulevard, Suite 625, Chicago, IL 60604; Phone: 312-461-0236; Fax: 312-461-0474; E-mail admin1@irta.net; Internet: www.irta.net/. National Association of Trade Exchanges, 27801 Euclid Avenue, Suite 610, Cleveland, OH 44132; Phone: 216-732-7171; Fax: 216-732-7172; E-mail: swhite@ibinc.com; Internet: www.nate.org/.

BENCHMARKING

Description: Benchmarking is a process of establishing tangible standards of achievement in progressing toward and reaching a specified set of goal(s). After a defined and shared agenda is developed and adopted, benchmarks are used as a tool to focus planning and implementation activities on achieving measurable, desired results. Benchmarking has a long history of extensive use in the private sector, especially in regards to manufacturing industries such as defense and commercial aviation, automobiles and trucks, machine tools, and appliances.

Actual Use: The State of Oregon pioneered the public sector use of the benchmarking technique with its innovative Oregon Benchmarks program begun in 1990-1. The Oregon program established benchmarks to measure the quality of the State's human, environmental (quality of life), and economic well-being over a twenty-year period. Oregon established benchmarks at three time frames within the twenty year period -- 1995, 2000, and 2010 -- for measuring progress in 158 discrete areas from the 1990 baseline. The tool has a long-term focus and is part of the State's efforts to develop sustainable communities.

Potential Use: Communities and States across the country could use benchmarking as a tool to help in addressing environmental, economic, and quality-of-life conditions and problems. Benchmarking could be a powerful way for empowerment zones and enterprise communities to strengthen implementation of their programs and activities. It also might prove useful in supporting community involvement in brownfields cleanup and redevelopment. Finally, benchmarking could be particularly helpful in focusing community-driven efforts on developing truly sustainable environmental systems.

Advantages: The mechanism is community-driven and agreement on shared goals can be a powerful driver towards any successful effort. Benchmarking provides tangible goals and measures of success against which to judge progress and results.

Limitations: The process of developing community consensus can be complex and time-consuming. Reaching a consensus on benchmarks (and even goals) may or may not be possible. Developing and implementing a benchmark program requires a continuing commitment over a long period of time and can be costly.

Reference for Further Information: *Oregon Benchmarks: Setting Measurable Standards for Progress*, Oregon Progress Board, 775 Summer Street, N.E., Salem, Oregon.

CAPITAL PLANNING AND BUDGETING

Description: Capital planning and budgeting, sometimes called capital or public improvement programming (See Section 8: Capital Improvements Program), is a set of techniques for considering the long-term needs for capital facilities and funding options for meeting such needs. Capital planning focuses on current unmet service requirements and needs for expansion, replacement, or renewal of existing facilities. It relies on engineering and feasibility studies to provide objective project appraisals and set project guidelines. If a capital budget is used, day-to-day operating expenses and capital (fixed asset) investments are accounted for separately. The capital budget generally includes appropriations for the acquisition, construction and repair of capital assets such as land, buildings, and other infrastructure improvements.

In the public sector, funds in a capital budget come primarily from general obligation bonds, dedicated taxes, fees, and trust fund revenues. In the corporate finance context, capital budgeting is a decision-making process with respect to investment in fixed assets (plant and equipment). It focuses on measuring the incremental cash flows associated with investment proposals and evaluating the attractiveness of these cash flows relative to the project's costs. Common evaluative techniques include payback period, discounted payback period, net present value, profitability index, and internal rate of return.

Actual Use: Capital budgeting is commonly employed by relatively sophisticated organizations in both the public and private sectors.

Potential Use: Capital budgeting has received increased federal attention. Executive Order 13037, dated March 3, 1997, established an eleven-member Commission to Study Capital Budgeting. Supported by the Treasury Department, it is to report to the National Economic Council, probably at the end of 1998. Capital planning and budgeting can provide a process whereby environmentally sensitive investment decisions will result.

Advantages: A capital budget separates investments from current expenses and focuses attention on long-term planning.

Limitations: Successful capital planning and budgeting depends on political support as well as the capability to collect and analyze data and express results in a form useful to decision-makers.

Reference for Further Information: Government Finance Officers Association (GFOA), 180 North Michigan Avenue, Suite 800, Chicago, IL 60601; Phone: 312-977-9700; Fax: 312-977-4806; Internet: www.gfoa.org/. International City/County Management Association (ICMA), 777 North Capitol Street, NE, Suite 500, Washington, DC 20002-4201; Phone: 202-289-4262; Fax: 202-962-3500; Internet: www.icma.org/.

COMPARATIVE RISK RANKING

Description: Risk ranking or comparative risk analysis is the management procedure of prioritizing environmental and public health problems that have undergone risk assessment. Risk assessment involves the identification of hazards, determination of their severity and discovery of exposure patterns. Risk ranking involves comparing individual risk characterizations, on a multi-media basis if possible, and ordering them by the priority in which they should or will be addressed.

Actual Use: Risks used in a local context differ from the use of risk in assessments driving federal or State regulations. The latter are often statistical statements of the probability of death, injury, or damage. A local risk assessment might be based on a survey, field-testing, or reliable empirical information that gives an indication of the nature and magnitude of a problem. Currently, separate rankings are generally done for public health and ecological risks, and assessments and ranking may vary from one community to the next due to varying local conditions. However, many States and a growing number of municipalities such as Cleveland, Ohio, and Phoenix, Arizona, are undertaking comparative risk studies.

Potential Use: Comparative risk ranking could be used by all levels of government to assist in financial decision-making, as to which problem to finance first, regardless of compliance deadlines.

Advantages: The consideration of comparative risk ranking permits communities to allocate limited resources to the most serious environmental and public health concerns first, and involves a high level of citizen input. Such risks may be less costly than other more expensive problems with shorter compliance deadlines. In 1995, EPA's Small Town Task Force formally recognized the need for flexibility in reordering priorities and compliance dates.

Limitations: The flexibility to set risk-based policies locally is not recognized in federal law, so specific agreements between the federal government, States, and localities must be negotiated. There is often a lack of objective risk information available and citizen input must be accounted for.

Reference for Further Information: ICMA, *Risk Assessment: The Role of Local Government*, Washington, D.C., 1997. Syracuse University, Environmental Finance Center draft report, *Risk and Finance*, June 1994. USEPA Journal, *Profiles In Risk Assessment: New Science, New Contexts*, Vol.199, No.1, January/February/March 1993. USEPA Science Advisory Board report, *Reducing Risk: Setting Priorities and Strategies for Environmental Protection*, September 1990. USEPA Office of Policy, Planning & Evaluation report, *A Guidebook to Comparing Risks and Setting Environmental Priorities*, September 1993. EPA sponsors Comparative Risk Centers in Vermont and Colorado.

COST-BENEFIT ANALYSIS

Description: Cost-benefit analysis is a short-hand term for a conceptual framework encompassing a variety of techniques for quantifying and comparing the incremental and total costs, risks, and benefits of legislation, regulations, and policies. Cost-benefit analysis attempts to quantify and assign dollar values to the costs and benefits of particular actions regardless of to whom those costs and benefits accrue. The use of cost-benefit analysis is intended to help produce the best decision by revealing the efficiency of proposed approaches.

Actual Use: Cost-benefit analysis has been used to varying extent for many years by federal, State and local governments (and agencies), as well as the private sector, as one tool to aid in important decision-making on a wide variety of topics, including environmental matters. For example, New York State agencies have been required by statute since 1983 to weigh the costs and benefits of proposed regulations during the rulemaking process. The federal government, meanwhile, has incorporated cost and benefit considerations as part of regulatory impact analyses for many years -- most recently in the January 11, 1996 Office of Management and Budget policy memorandum, *Economic Analysis of Federal Regulations Under Executive Order No. 12866* ("Regulatory Planning and Review").

Potential Use: Cost-benefit analysis could be used by all governments and private sector to help evaluate the efficiency of any and all decision options.

Advantages: Cost-benefit analysis can communicate to decision makers the economic efficiency of proposed/possible approaches. This economic information then can be given appropriate consideration along with relevant social, health, environmental, and technical considerations in making environmental and other decisions.

Limitations: Good cost-benefit analyses may be time consuming and costly, require considerable technical expertise, and depend heavily on good (and available) information from multiple data sources. In the absence of any or all of these factors, a cost-benefit analysis may be considered suspect and/or inadequate.

Reference for Further Information: Executive Office of the President, Office of Management and Budget, New York State, Governor's Office of Regulatory Reform, *Cost-Benefit Handbook: A Guide for New York State Regulatory Agencies*. USEPA's Economy and the Environment Homepage is located at <http://www.epa.gov/oppe/eaed/eedhmpg.htm>.

COST-EFFECTIVENESS ANALYSIS

Description: This is an analytic process where the cost-effectiveness of a regulatory or other policy alternative is calculated by dividing the annualized cost of the alternative by some measure of its effectiveness. For environmental protection purposes, the measure of a policy alternative's effectiveness may range from the amount of the reduction in a pollutant generated to statistical and actual improvements in human health and/or the environment. In general, the specific measure of effectiveness chosen should correspond as closely as possible to the final effects sought by the regulatory or other policy alternative.

Actual Use: Cost-effectiveness analyses are routinely used by federal executive departments and agencies, including the Environmental Protection Agency, when performing Regulatory Impact Analyses (RIAs) of regulatory alternatives for which there are many benefits that cannot be easily monetized, or when the law sets forth a specific regulatory objective. Cost-effective analyses are also performed by many State agencies and private businesses.

Potential Use: These analyses could be used more frequently by the federal government in helping to make decisions on selecting environmental regulatory alternatives. It could also be used by more State governments, as well as the governments of large cities to guide and support their environmental decision-making.

Advantages: Cost-effectiveness analysis can be used quite effectively to identify the least-cost way of reaching a pre-determined objective, policies that maximize the level of a stated type of benefit, and the incremental tradeoffs between different levels of controls when no benchmarks exist. It can indicate which pollution control measures or policies are inferior alternatives.

Limitations: It must be emphasized that the use of cost-effectiveness analysis does not necessarily reveal what level of environmental control is reasonable or even desirable. Furthermore, this type of analysis requires considerable analytical expertise on the part of staff and can be both time-consuming and expensive to implement (outside experts also can be very costly).

Reference for Further Information: USEPA, Office of Policy, 401 M Street, SW, Washington, DC 20460, Mail Code: 2111; Phone: 202-260-4332; Fax: 202-260-0275. See "Guidelines for Performing Regulatory Impact Analysis", reprinted March 1991

DEDUCTION OF AGRICULTURAL CONSERVATION EXPENSES

Description: Certain agricultural soil and water conservation expenses are deductible for federal income tax purposes. These include the costs of soil and water conservation improvements to, or prevention of erosion of, land the owner or a tenant is using or has used for farming. Among the covered activities are leveling, conditioning, grading, terracing, contour furrowing, restoration of soil fertility, and related treatment or movement of earth. Also covered are the construction, control and protection of diversion channels, drainage ditches, irrigation ditches, earthen dams, watercourses, outlets, and ponds. Costs of the planting of windbreaks and eradication of brush also may be deducted. Expenses to drill a water well for irrigation or other agricultural purposes, to prepare land for center pivot irrigation systems, or to drain or fill wetlands are not deductible. Assessments for depreciable property that a soil and water conservation or drainage district levies against farm land also can be deducted. Although not conservation expenses, other ordinary and necessary expenses such as the cost of annual removal of sediment from a drainage ditch are deductible as business expenses on Part II of IRS Schedule F, *Profit or Loss from Farming*.

Actual Use: This deduction is commonly used when the tax reduction benefits outweigh the burdens imposed by inclusion of cost-sharing payments in gross income.

Potential Use: The deduction can encourage farmers and ranchers to undertake soil and water conservation measures they would not otherwise undertake.

Advantages: Deductions in the tax years of covered expenditures can reduce the after-tax cost.

Limitations: Expenses can be deducted only if they are consistent with a plan approved by the U.S. Department of Agriculture's Natural Resources and Conservation Service. If soil and water conservation expenses are deducted, cost-sharing payments for such expenses cannot be excluded from gross income. Any portion of conservation expenses benefitting land that does not qualify as farm land cannot be deducted. Direct expenses for structures or facilities subject to an allowance for depreciation must be capitalized, including expenses for moving dirt when making structures such as reservoirs, tanks, canals, conduits, wells and dams composed of masonry, concrete, tile, metal or wood. Similarly, expenses to drain or fill wetlands must be added to the basis of the land. The deduction cannot be more than 25 percent of gross income from farming.

Reference for Further Information: Consult a tax practitioner. See also pages 30-32 of Internal Revenue Service Publication 225, *Farmer's Tax Guide*. Contact the IRS at 1111 Constitution Avenue, NW, Washington, DC 20224; Phone: 800-829-1040; Fax: 703-368-9694; Internet Address: www.irs.ustreas.gov/prod/forms_pubs/index.html

DISCOUNTING (ECONOMIC)

Description: Discounting focuses on the time value of money (a dollar today is worth more than a dollar tomorrow). In financial accounting it is the essence of most capital investment appraisal, comparing present cash flows with cash flows in a later period. Methods often used include net present value (NPV) and internal rate of return (IRR). NPV discounts all cash flows to present values at a predetermined rate of interest (discount rate). The rate estimates the cost of capital adjusted for anticipated inflation and investment risk. The present value of cash outflows is deducted from the present value of inflows to arrive at a net present value. The IRR is that discount rate which when applied to cash flows makes its NPV equal to zero. With the IRR method, more than one solution is possible if the cash flow pattern is not one of net outflows followed by net inflows. In practice, present value and future value tables are used to determine the proper discount factor. In real property appraisal, discounted cash flow (DCF) analysis is used to prepare a cash flow forecast for the property interest appraised. The total present value of the cash becomes the value estimate for that interest. Two common income capitalization approaches are direct capitalization and yield capitalization. A number of alternative algebraic formulas can be used to account for the impact of financing terms, use of a sinking fund, and prospective changes in income and value.

Actual Use: Discounting is commonly used in capital investment decision-making. Discount rates (compound interest rates) are used to convert expected future cash flows into present value estimates for commercial real estate appraisals. In practice, the discount rate is the competitive rate of return applicable to the property interest and cash flows analyzed. Payback period (PBP) and discounted cash flow (DCF) techniques are often used in combination, tilting results toward risk reduction.

Potential Use: Discounting can provide a basis for choices among alternative investments in environmental measures or equipment needed to produce environmentally friendly goods.

Advantages: Discounting is easy to use with financial calculators or personal computer software. Accounting for the time value of money deals with opportunity costs, inflation, and time preferences. NPV and IRR are not subject to problems caused by accounting adjustments as decisions are based on cash flows; however, they tilt results toward maximization of owners' or stockholders' wealth.

Limitations: Discounting does not answer all of the questions involved in capital investment decisions. Its application to public sector investments is criticized as unfair to future generations and as ignoring the essential issue of sustainability.

Reference for Further Information: For real property transactions, consult a licensed/certified commercial real estate appraiser.

EMPLOYEE STOCK OWNERSHIP PLANS

Description: An employee stock ownership plan (ESOP) is a type of tax-qualified employee benefit plan governed by the Employee Retirement Income Security Act (ERISA). As such, it is a defined contribution pension plan (stock bonus and/or money purchase) designed to invest primarily in the stock of the employer firm. Under an ESOP, employees can take over or participate in the management of the employer by becoming stock shareholders through a nonprofit trust. However, the trustee of the ESOP (usually a commercial bank that does not have a lending relationship with the parties) actually votes the ESOP shares. The most sophisticated use of an ESOP is to borrow money. Leveraged ESOPs can use borrowed funds to provide an accelerated transfer of stock to employees and provide new capital to the company. Although the employer must guarantee repayment of the loan, it can take tax deductions for contributions to the ESOP used to repay both principal and interest on the loan, as well as for dividends on ESOP-owned stock. If the leveraging is to provide the company new capital for expansion or capital improvements, the company uses the cash to buy new shares of stock. If the leveraging is being used to divest a division, the ESOP buys the shares of a newly created shell company, which in turn purchases the division and its assets. In the public sector, an ESOP can be used in privatizing a service or function.

Actual Use: There are over 10,000 ESOPs in the U.S. covering almost 9 million participants and controlling over \$210 billion in company stock. Only about 15 percent are in publicly traded companies, but this group has accounted for approximately 80 percent of ESOP borrowing.

Potential Use: Leveraged ESOPs can be used to finance environmental investments such as purchases of pollution abatement equipment or development of ecologically friendly products.

Advantages: Contributions to ESOPs are tax deductible to the sponsoring corporation up to certain limits. When employer securities are contributed directly, the employer may take a tax deduction for the full value of the stock contributed. This increases the employer's cash profits by the value of the taxes saved.

Limitations: ESOP participants must be allowed to direct the ESOP trustee's vote of unallocated shares on major corporate transactions, such as a merger.

Reference for Further Information: Consult a tax practitioner. See also the National Center for Employee Ownership, 1201 Martin Luther King Jr Way, Oakland, CA 94612; Phone: 510-272-9461; E-mail: nceo@nceo.org; Internet: www.nceo.org. For tax rules, contact the Internal Revenue Service, 1111 Constitution Avenue, NW, Washington, DC 20224; Phone: 800-829-1040; Fax: 703-368-9694; Internet: www.irs.ustreas.gov/.

ENVIRONMENTAL PROTECTION AGENCY COMMON SENSE INITIATIVE

Description: The Environmental Protection Agency's (EPA's) Common Sense Initiative (CSI) embodies a new generation of environmental protection. Via the CSI, EPA brings together businesses, governments, and environmentalists to develop cleaner, cheaper and smarter ways of protecting public health and the environment. The Initiative takes an industry-by-industry approach working to prevent and cleanup pollution rather than shifting it around. It seeks to bring all involved parties together to develop consensus solutions. Using innovation and common sense, it strives for cleaner goals using flexible means. The CSI incorporates pollution prevention as a standard environmental tool to be used with cleanup controls. It tries to tailor environmental requirements to fit the way that businesses work to ensure that real environmental results are achieved.

Actual Use: The six industries participating in the first phase of the CSI are automobile assembly, computers and electronics, iron and steel, metal plating and finishing, petroleum refining, and printing. These industries represent over 11% of the Gross Domestic Product, employ 4 million people, and account for 12.4% of toxic releases reported by industry in 1992. For each industry, EPA assembles a team of stakeholders to find ways to change complex and inconsistent environmental policies into better, more usable comprehensive sector approaches. For example, the computer and electronics group is identifying the composition of its waste streams to develop new pollution prevention tools and improve waste collection. The metal finishing industry is looking for ways to improve the ability of firms to access and afford financing for environmental investments.

Potential Use: While currently experimental, the CSI is potentially applicable to all US industrial sectors. It facilitates the development and testing of realistic and effective multimedia environmental policies. The Initiative offers an opportunity to forge a new and better environmental consensus for the future.

Advantages: The CSI's multi-media focus can produce improved environmental results at less cost. Its flexible approach promotes creativity and encourages use of innovative technologies. Industry cooperation means that results will be real and measurable (so they can take credit for them).

Limitations: Current federal environmental laws and corresponding regulations are media-specific (air, land, water, etc.) and are not necessarily flexible. The process of reaching consensus among industry, government, and environmentalists on achievable environmental goals and acceptable flexibility is often slow, not easy, and may not always be possible.

Reference for Further Information: USEPA, 401 M Street, SW, Washington, DC 20460 - Mail Code: 6101; Phone Number: 202-260-7417. CSI's home page is located on the World Wide Web at <http://www.epa.gov/commonsense/>.

ENVIRONMENTAL PROTECTION AGENCY PROJECT XL

Description: Project XL is a federal program managed by the Environmental Protection Agency (EPA) that gives regulated entities the flexibility to implement alternative strategies that replace or modify specific regulatory requirements, produce superior environmental results and promote greater accountability. While this is a federal program, most XL Projects require the participation of State regulatory agencies and local governments. Project XL seeks to give a limited number of responsible parties the opportunity to demonstrate environmental excellence and leadership. It seeks to develop real world projects that produce costs savings, reduce paperwork burdens, build stakeholder support, test innovative multimedia strategies (with a pollution prevention preference), and can be replicated. Under XL, project sponsors can include private facilities, multiple facilities, industry sectors, federal facilities, communities, and States.

Actual Use: XL projects go through three phases: proposal development; project development; and implementation and evaluation. As of April 1998, seven pilot projects were being implemented and twenty-nine additional projects were being developed. Some of the companies participating in XL projects being implemented include the Berry Corporation, Weyerhaeuser, the Intel Corporation, Lucent Technologies, Vandenberg Air Force Base (the Department of defense), Merck & Co. Inc., and the HADCO Corporation.

Potential Use: EPA has committed to a goal of implementing fifty pilot projects in four categories: XL projects for facilities, sectors, government agencies, and communities. The new approaches tested in XL projects could be incorporated into EPA and State environmental programs, replicated in other facilities in the same industry or community, and/or transferred for use in other industries and communities.

Advantages: The multi-media focus of XL projects can produce superior environmental results often at less cost. The flexible approach used in XL projects promotes creativity and encourages innovation, especially with pollution prevention. When stakeholder consensus can be achieved, it can mean fewer future disagreements between affected parties and less after-the-fact litigation.

Limitations: Current federal environmental laws and corresponding regulations are media-specific (air, land, water, etc.) and are not necessarily flexible. The process of reaching consensus among stakeholders on acceptable regulatory alternatives, definitions of excellence, and adequate accountability may be slow, difficult, and not always possible.

Reference for Further Information: USEPA, Office of Reinvention Initiatives, Project XL, 401 M Street, SW, Washington, DC 20460; Phone: 202-260-5754; Fax-on-demand line:202-260-8690. Internet: http://yosemite.epa.gov/xl/xl_home.nsf/all/homepage

EXPENSING OF ASSETS

Description: The expensing of depreciable assets is a tax accounting concept. Section 179 of the Internal Revenue Code allows businesses to elect a current expense deduction in the year the qualifying property is placed in service, which gives them a more immediate tax benefit than does a depreciation deduction over a specified recovery period. Qualifying property is acquired for use in a trade or business and includes tangible personal property such as machinery and equipment. However, property acquired from related persons, including corporations, does not qualify.

Actual Use: Expensing is a widely and commonly used current-year income tax minimization strategy. Gasoline storage tanks and pumps at retail service stations are qualifying tangible personal property. Single-purpose agricultural and horticultural structures also qualify. Energy property other than public utility property can qualify. This includes equipment that uses solar energy to generate electricity, to heat or cool, or to provide hot water for use in a structure, or to provide solar process heat. Also included is equipment to produce, distribute or use energy derived from a geothermal deposit up to the electrical transmission stage. Other type of air conditioning or heating units do not qualify.

Potential Use: Environmental equipment acquisitions can be expensed to reduce the after-tax cost, as can be purchases of equipment needed for production of environmentally friendly goods or delivery of environmental services.

Advantages: The use of expensing increases current year cash profits by decreasing taxable income and consequent federal tax liability.

Limitations: The deduction must be claimed on Form 4562. The \$18,000 limit for 1997 is reduced dollar-for-dollar by the amount of investment in qualifying property exceeding \$200,000. For 1998 the limit is \$18,500 and the same investment restriction applies. The maximum deduction for qualified zone property, including buildings, is \$38,000 for enterprise zone businesses. Definitions of qualified zone property and enterprise zone businesses were changed effective August 5, 1997.

Reference for Further Information: Consult a tax practitioner. See pages 11-21 of Internal Revenue Service (IRS) Publication 946, *How To Depreciate Property*. Contact the IRS at 1111 Constitution Avenue, NW, Washington, DC 20224; Phone: 800-829-1040; Fax: 703-368-9694; Internet: www.irs.ustreas.gov/prod/forms_pubs/index.html.

FINANCIAL CAPABILITY ANALYSIS

Description: Financial capability/affordability analysis is a tool used by public and private entities such as local governments and businesses, to determine if they have the ability to pay for capital investments and the costs of operations, maintenance, and replacement, of specific facilities or pieces of major equipment. It is used to examine the financial impact of proposed projects or purchases on the entity as a whole, as well as on individuals and households. It is used to help size/match investment plans to resources. Affordability analysis is a type of financial capability tool that measures the impact of proposed investments as a percentage of median household income (MHI).

Actual Use: Most State Revolving Funds require communities seeking assistance to submit financial information to them, and this information is especially critical in determining interest rates for hardship loans. The Drinking Water SRF (DWSRF) also uses this information when determining if a principal subsidy is offered. Businesses use financial capability analysis to help determine the feasibility of desired capital investments. Debt/credit rating organizations use them in calculating the quality/strength of bonds being offered by public and private entities. Banks and other financial institutions use them in credit analyses to help decide whether to make loans, and setting proper interest rates. State comptrollers may review local capability when evaluating revenue bond issues.

Potential Use: Ideally, financial capability analysis would be utilized by both public and private entities whenever a substantial environmental or other investment is contemplated and/or made. An example of a financing tool that performs a financial capability analysis is the expert rate-setting and financial planning software for water and wastewater systems known as the “rate model.” This electronic tool is described in **Section 5B: Electronic Services**.

Advantages: Proper use of this tool helps to ensure that communities and business alike are able to develop and implement financially sustainable environmental and other systems. It also determines the level and kind of SRF and other government loan programs.

Limitations: Determining financial capability may be difficult and expensive for small communities to perform on their own, as they may lack in-house financial and economic expertise. Affordability analyses typically do not evaluate the cumulative costs of environmental mandates and no standardized or common methodology exists. DWSRFs are finding it difficult to perform such analyses for small private drinking water loan recipients, because of lack of data.

Reference for Further Information: USEPA, Office of Policy, Economy and the Environment Division, 401 M Street, SW, Washington, DC 20460, Mail Code: 2172; Phone: 202-260-5488. Fax: 202-250-5732. New England Interstate Water Pollution Control Commission, *Projected Household Costs of Mandated Environmental Infrastructure Investments*, August 1995.

FISCAL IMPACT ANALYSIS

Description: Fiscal impact analysis is a basic component of development analysis, along with environmental impact analysis. It is a tool for identifying public costs, including the potential cost of public services, associated with private development. (In this regard it is somewhat similar to state legislative fiscal impact analysis, although typically narrower in focus.) At a minimum, fiscal impact analysis considers capital costs, operating and maintenance costs, changes in revenue attributable to the project, impacts on energy requirements, and potential legal liabilities which result from action or inaction on the project. Each element may be weighted to reflect policy priorities. The length of the payback period may be estimated for projects creating savings or revenues, or the project's present worth in terms of the stream of outlays and revenues may be calculated.

Various local governments use different methods and criteria. For example, some look at the public costs of health and safety effects, community economic impacts and quality-of-life factors. Interrelationships among projects, including those in neighboring jurisdictions also are considered in some cases. In any event, the ultimate concern is whether the prospective fiscal impact of a project is the imposition of net additional expenditures.

Actual Use: Most cities and counties in the State of California require fiscal impact analysis prior to project consideration. Many other local governments across the country use limited versions of fiscal impact analysis as part of their land-use planning and zoning processes.

Potential Use: Fiscal impact analysis can be used to show the real costs to the public sector (as a proxy for a community) of public and private development projects and alternatives.

Advantages: Fiscal impact analysis can reveal environmental and quality of life benefits, as well as direct and indirect costs.

Limitations: Useful fiscal impact analysis depends upon adequate data as well as analytical capability. It can be expensive and time-consuming or, if limited to simplistic marginal cost calculations, have little utility.

Reference for Further Information: Government Finance Officers Association (GFOA), 180 North Michigan Avenue, Suite 800, Chicago, IL 60601; Phone: 312-977-9700; Fax: 312-977-4806; Internet: www.gfoa.org/. American Planning Association, 1776 Massachusetts Avenue, NW, Washington, DC 20036, or 122 South Michigan Avenue, Suite 1600, Chicago, IL 60603; Phone: 202-872-0611 or 312-431-9100; Fax: 202-872-0643 or 312-431-9985; Internet address: www.planning.org/info/infoguid.html. International City/County Management Association (ICMA), 777 North Capitol Street, NE, Suite 500, Washington, DC 20002-4201; Phone: 202-289-4262; Fax: 202-962-3500; Internet: www.icma.org/.

FULL-COST PRICING

Description: Full cost pricing for public and private utilities occurs when user fees are set to recover all of the costs associated with providing services -- capital, operations, maintenance, debt service, and replacement. Charging the full cost for environmental facilities and services helps to ensure that the demand for the facilities and services is proportionate with the cost of providing them, and that they are both environmentally and financially self-sustaining.

Actual Use: Historically, not many communities have relied on user fees to cover the full costs of providing environmental facilities and services. Instead, they have elected to subsidize to varying degrees the provision of these facilities and services, particularly non-capital costs, from some other source of revenue. Private businesses, on the other hand, more often ensure that the full costs for facilities and services are passed on to customers/users.

Potential Use: In an ideal world, the full-cost pricing of environmental facilities and services would be adopted as the financing standard in the public sector -- being implemented for all activities in every State and community across the nation. As governmental and/or natural resources become increasingly constrained, the pressure for full-cost pricing will build.

Advantages: Charging fees that recover the full costs of providing facilities and services create financially sustainable environmental systems. Costs are not hidden or ignored, and careful strategies can reduce operations and maintenance costs in the future. In addition, capital investments can be undertaken when market conditions and interest rates are most advantageous. The full-cost pricing of environmental activities may also encourage users to better conserve valuable or limited natural resources.

Limitations: Determining "full-cost pricing" user fees can be a difficult and an expensive job for public agencies. Especially in smaller communities, such agencies often lack general, in-house expertise in determining these costs. Public agencies must also address numerous regulatory issues in determining fair fees that must be set at new levels. They may also face strong political constraints and voter objections to full-price costing if the resulting user fees must be substantially higher than in the past. Local governments may decide to subsidize user fees to achieve some other public policy goal, e.g., to attract industry or control growth.

Reference for Further Information: USEPA Environmental Financial Advisory Board Advisory - *Private Sector Participation in the Provision of Environmental Services: Barriers and Incentives*, November 25, 1991. USEPA, 401 M Street, SW, Washington, DC 20460. Mail Code: 2731R

LIFE-CYCLE ASSESSMENT/COSTING/DESIGN

Description: Life-cycle assessment/costing seeks the most cost-effective alternative that achieves the least long-term cost of acquisition and ownership. A low initial acquisition cost does not ensure a low life-cycle cost, which includes operating and support costs (e.g., spare parts, maintenance and support equipment). Life cycle cost is the total of all costs from project inception through development, acquisition, and support to the decommissioning of a facility or disposal of equipment at the conclusion of its useful life. Life-cycle accounting assigns product-specific costs, including contingent liabilities, in a holistic frame-work. Life-cycle design applies life-cycle assessment to product design and redesign decisions. Four linked components have been defined for life-cycle assessment of environmental impacts. Goal definition and scoping identifies the assessment purpose and the study's expected products. It determines the boundaries of the study and assumptions based on the goal definition. Life-cycle inventory quantifies the energy and raw material inputs and environmental releases associated with each stage of production. Impact analysis assesses the impacts on human health and the environment associated with energy and raw material inputs and environmental releases quantified by the inventory. Improvement analysis evaluates opportunities to reduce energy, material inputs, or environmental impacts at each stage of the product life-cycle.

Actual Use: Life-cycle assessment has become a valuable decision-support tool in examining the cradle-to-grave impacts of processes and products, in part due to the Chemical Manufacturer Association's Responsible Care Program, methodological developments by the Society for Environmental Toxicology and Chemistry, and increasing adoption of ISO 14000 (see **Section 7., Green Code of Conduct (ISO 14000 Standards Voluntary Environmental Standards)**). A 1995 survey of Fortune 500 companies indicated that most who were routinely assessing the environmental consequences of their products and production systems were doing so to reduce environmental costs.

Potential Use: Life-cycle analysis methodologies can be used to assess the environmental impacts of products and industrial processes from the inputs to final disposal.

Advantages: Recognition of life-cycle costs allows an organization to minimize total costs.

Limitations: The data required is extensive and the analytical techniques can be complicated.

Reference for Further Information: *Life Cycle Design Guidance Manual: Environmental Requirements and the Product System* and *Life Cycle Assessment: Investments Guidelines and Principles*; Office of Pollution Prevention and Toxics, USEPA, 401 M Street, SW, Washington, DC, Mail Code: 7409; Phone: 202-260-3557; Fax: 202-260-0178. Tellus Institute, 11 Arlington Street, Boston, MA 02116-3411; Phone: 617-266-5400; Fax: 617-266-8303; E-mail: INFO@tellus.org; Internet: www.tellus.org/.

PAY-AS-YOU-GO

Description: Although, in the public sector, “pay-as-you-go” normally is associated with operating budgets and current expenses, it also is the financial policy of funding capital outlays from the cash budget, which depends on current, usually own-source, revenues, rather than by borrowing. As such, it relies on current tax and fee revenues, intergovernmental transfers, and/or trust fund balances rather than the issuance of even short-term debt. User fees and special, earmarked taxes tend to be the revenue foundations of a pay-as-you-go system. Creation and maintenance of reserve/trust funds often are employed to accrete sufficient amounts for fixed asset projects. The Federal Highway Trust Fund is perhaps the prime example of this approach. A governmental unit which pays for some improvements from current revenues and for others by borrowing is on a partial or modified pay-as-you-go basis. A pay-as-you-go approach to fixed asset financing tends to work best if funds are allocated in an annual capital budget, not an operating budget.

Actual Use: Pay-as-you-go is the traditional approach for financing relatively small fixed asset projects, such as some communications equipment and transportation vehicles. Its popularity increases with higher interest rates and the consequent higher cost of debt.

Potential Use: The pay-as-you-go approach is feasible for relatively small environmental projects that enjoy sufficient political support to compete against other current budget priorities.

Advantages: Avoidance of the interest costs and other fees that are an integral part of borrowing can represent substantial savings. In addition, the fiscal discipline inextricably associated with pay-as-you-go can encourage public attention to preventive maintenance and proper operation so as to avoid unnecessary capital outlays.

Limitations: Pay-as-you-go tends to be a realistic approach only for capital investment projects that do not cost so much that their funding precludes other, equally important activities. Although some projects can be financed incrementally, the magnitude and/or uneven nature over time of some capital investments (e.g., bridges) precludes such a strategy.

Reference for Further Information: Government Finance Officers Association (GFOA), 180 North Michigan Avenue, Suite 800, Chicago, IL 60601; Phone: 312-977-9700; Fax: 312-977-4806; Internet: www.gfoa.org/. International City/County Management Association (ICMA), 777 North Capitol Street, NE, Suite 500, Washington, DC 200024201; Phone: 202-289-4262; Fax: 202-962-3500; Internet: www.icma.org/.

POLLUTANT LOADING ALLOCATION

Description: Pollutant loading allocation is a valuable tool for implementing environmental quality standards by establishing the relationship between pollution sources and environmental conditions. The objective of allocation is to distribute allowable pollutant loadings among different pollutant sources so that the appropriate control actions can be taken and the required environmental quality standards achieved. Specifically, the Total Maximum Daily Loading (TMDL) approach provides an estimate of pollutant loadings from all sources and predicts the resulting pollutant concentrations. The TMDL is derived from all point, nonpoint, and background sources. After the TMDL is derived, maximum limits are allocated to various pollution sources.

Actual Use: The Clean Water Act requires that States develop TMDL processes for water-quality limited waters. The TMDL concept has been successfully applied to develop waste load allocations for point sources in low flow situations where nonpoint sources are not a concern. These allocations, which are based on actual water quality impacts, can produce quantifiable pollution reductions.

Potential Use: The TMDL process must take into account nonpoint sources as well. For example, if excess sediment proves detrimental to water quality, nonpoint and point sources of sediment could be identified, and loadings assigned to each kind of source. If the measurement and tracking of air pollution becomes sufficiently exact, a TMDL process might also be applied to help communities better meet water quality standards, as well as meet air quality standards.

Advantages: TMDLs may significantly reduce pollution when attention is focused on all nonpoint sources, some of which may be newly recognized. TMDLs allow (in fact, encourage) the private sector to innovate because they typically do not require use of a particular technology or Best Management Practice (BMP), but let the TMDL holder decide how reductions will be achieved, thus analysis of the least-cost solution is encouraged.

Limitations: In some cases, it may be difficult to determine sources of pollution, particularly nonpoint sources, and therefore determine appropriate loadings. The impacts on water quality from different sources is also a complicated analysis. Currently, a number of States and localities are not vigorously pursuing TMDL work. Considerable staff expertise may be necessary to credibly pursue TMDL work in an expeditious and timely manner.

Reference for Further Information: U.S. EPA, Office of Water, *Guidance for Water-Quality Based Decisions, The TMDL Process*, April, 1991. See also the U.S. EPA, Office of Water TMDL web page on the Internet at: <http://www.epa.gov/OWOW/tmdl/index.html>.

REFINANCING LOANS

Description: Refinancing loans can be a way to reduce interest payments when the economic climate is one of lower interest rates compared to the time of the original loan. Refinancing may be used to change loan maturity and, if extended or lengthened, can reduce annual repayment costs, in the short term. A related financing tool is bond refinancing, typically termed as refunding or advanced refunding. Bond refinancing occurs when bonds are sold to provide funds to retire outstanding debt of an issuer. This related financing tool is discussed in **Section 2.A., Advanced Refunding**.

Actual Use: Loan refinancing is a long-standing, common, and widely accepted financial practice in both the public and private sectors. Most commercial lending institutions will refinance loans, and the refinancing need not be handled by the original lender. Loan refinancing is much less complex than bond refunding, since the financial return to individual investors is less of an issue. State Revolving Fund (SRF) refinancings are extremely common, although both the Clean Water Act and the Safe Drinking Water Act set time restrictions on refinancing, i.e., refinancings are allowed for bonds issued after March 7, 1985 (Clean Water SRF) and July 1, 1993 (Drinking Water SRF). These restrictions are meant to assist the refinancing of recent short-term municipal debt as well as long-term debt when SRF financing is not immediately available. The Drinking Water SRF, however, may not be used to refinance private sector water projects. Nationally, Clean Water SRF refinancing accounted for 17% of SRF lending in 1995, and exceeded 25% in Maine, Massachusetts, and New York. The Clean Water SRF also may be used to refinance Rural Development loans.

Potential Use: Refinancing can occur for any environmental lending, since it is the interest rate climate and availability of lending monies that influence refinancing rather than the environmental program area. Many commercial institutions specialize in refinancing.

Advantages: The possibilities for lowering costs through the interest rate reductions associated with refinancings are considerable, particular in today's (1998) climate of extremely low interest rates. Annual interest payment costs can be reduced further through the extension of loan maturity dates, although longer maturities can end up costing more. The money which is saved through refinancing can be invested in new environmental projects and other initiatives.

Limitations: Similar to home mortgages, refinancing can be administratively burdensome. Also, borrowers have to absorb new financing costs such as issuance and service fees. Thus, small borrowers may have less access to refinancing than large ones, and commercial lending institutions may be less interested in refinancing small loans because of the time, effort and cost involved.

Reference for Further Information: Council of Infrastructure Financing Authorities, *1995 Revolving Loan Fund Survey*, prepared by the Ohio Water Development Authority, May 1996.

REFORESTATION TAX CREDIT AND AMORTIZATION

Description: Up to \$10,000 per year of qualified timber property reforestation expenses can be amortized over an 84-month period. A tax credit of either 10% or 8% of the expenditures qualified for amortization can be claimed. Qualifying expenses include only costs which must otherwise be capitalized (e.g., site preparation, seeds or seedlings, paid labor, small tools, and depreciation on equipment used in planting and seeding). Qualifying timber property must consist of at least one acre planted with tree seedlings in the manner normally used in forestation or reforestation for commercial production of timber. This does not include property on which shelter belts, nut trees, Christmas trees, or ornamental trees have been planted. Nor does timber grown for personal use qualify. However, the site can be owned or leased.

To amortize, the deduction must be entered in Part VI of IRS Form 4562 and a statement describing the expenses attached. A federal income tax credit can apply to up to \$10,000 of the costs incurred each year to forest or reforest property held for growing trees for sale or use in the commercial production of timber products. Although costs must qualify for amortization, the credit can be used regardless of whether the costs are amortized or added to the basis of the property. If qualified property is disposed of within ten years after the tax year in which amortization of reforestation expenses is taken, gains must be reported as ordinary income up to the amount of amortization taken.

Actual Use: Since 1980, Section 194 of the Internal Revenue Code (26 USC 194) has allowed deduction of the amortization of qualified timber property from adjusted gross income for income tax purposes. Section 48(b) of the Code authorizes the reforestation credit.

Potential Use: Tax credits can induce for-profit entities to make reforestation investments which would otherwise not be considered.

Advantages: Both the tax credit and amortization can make reforestation investments financially feasible for-profit landowners.

Limitations: Expenses reimbursed under any governmental reforestation cost-share program cannot be amortized unless the reimbursement is included in gross income. Qualifying expenses in excess of the \$10,000 annual limit cannot be carried over or back to other tax years. If any of the amortized timber stand is disposed of within 10 years of the year in which amortization was elected, any gain up to the amount of amortization taken is recaptured as ordinary income.

Reference for Further Information: Consult a tax practitioner. See page 49, IRS Publication 225, *Farmer's Tax Guide* and page 52, IRS Publication 535, *Business Expenses*. Contact Internal Revenue Service, 1111 Constitution Avenue, NW, Washington, DC 20224; Phone: 1-800-829-1040; Internet: www.irs.ustreas.gov/.

REGIONALIZATION

Description: Pollution does not respect political boundaries. Agglomeration economies promoting industrial urbanization and pollution often transcend political jurisdictions. The regional impacts of air and water pollution have meant that States and communities cannot independently solve all of their pollution problems. For example, chemical precursors to ground-level ozone pollution can be carried hundreds of miles downwind from their origins. It is also clear that watersheds and other “trans-boundary” ecosystems cross the territorial lines of governmental jurisdictions, including national borders. In response to these realities, geographic regionalization of some types of environmental facilities and services can produce economies of scale which reduce average unit cost. The regional consolidation of management and overhead functions such as procurement, pooling of debt issuance and risk management, can also reduce costs associated with environmental concerns.

Actual Use: Regional approaches have been used increasingly to solve problems. The Association of Bay Area Governments, a regional organization serving the San Francisco area, offers a wide range of financial programs for issuance of conduit revenue bonds or certificates of participation, general municipal credit obligations, tax increment bonds, community facilities district and special assessment bonds, general capital financing, and low-cost alternatives to vendor financing.

Potential Use: Regional strategies are essential to prevent certain types of environmental degradation and pollution or effectively remediate effects of cross-border pollution. They also offer opportunities to reduce costs and improve services where economies of scale are a significant factor.

Advantages: For drinking water, economies of scale offer the most promising way of lowering the unit cost of production, and thus, consumer bills, in some circumstances. Economies of scale are particularly relevant for source-of-supply and treatment functions and can be achieved via mergers, acquisitions, interconnection, and wholesale water markets. Some economies can be achieved through common ownership or management even without the benefit of physical interconnection.

Limitations: Regional approaches require cooperation and legal authority. They also may be attacked as interfering with local political power or home rule.

Reference for Further Information: USEPA, Office of Air Quality Planning and Standards, Research Triangle Park, NC 27711; Phone: 919-541-5616; Fax: 919-541-2464; National Association of Development Organizations, 444 North Capitol Street, NW, Suite 630, Washington, DC 20001; Phone: 202-624-7806; Fax: 202-624-8813; E-mail: nado@sso.org; Internet: www.nado.org/; National Association of Regional Councils, 1700 K Street, NW, Suite 1300, Washington, DC 20006; Phone: 202-457-0710; Internet: www.narc.org/. Association of Bay Area Governments, PO Box 2050, Oakland, CA 94604-2050; Phone: 510-464-7900; Fax: 510-464-7979; Internet: www.abag.ca.gov/services/finance/abagfs.htm.

REHABILITATION TAX CREDITS

Description: Federal tax credits to support private investment in the substantial rehabilitation of historic and older buildings are authorized by Section 251 of the Tax Reform Act of 1986. This certified rehabilitation of a certified historic structure is supported by a twenty percent tax credit. A depreciable building rehabilitated for office, commercial, industrial, agricultural, or rental residential purposes may qualify for the tax credit if it is listed in the National Register of Historic Places or is located in a registered historic district and is certified by the National Park Service as contributing to the district's historic significance. The owner must hold the building for five full years after completing the rehabilitation, or pay back a portion of the tax credit. A ten percent tax credit is available for substantial rehabilitation of older, non-historic buildings (built before 1936) for non-residential uses. The cost of rehabilitation must exceed the greater of \$5,000 or the adjusted basis of the depreciable property and at least seventy-five percent of the building's internal structural framework must remain in place.

Actual Use: Rehabilitation tax credits for historic and other buildings have been authorized in federal income tax laws since 1976. These tax credits have been used extensively in a number of inner-city revitalization efforts.

Potential Use: The availability of a federal tax credit for building rehabilitation offers owners of qualifying historic and older, non-historic buildings the opportunity to accomplish much needed environmental remediation involving the removal of the hazardous substances at significantly lower after-tax costs.

Advantages: Tax credits reduce income tax liabilities dollar-for-dollar, unlike deductions which have a value based on the marginal tax rate.

Limitations: Buildings listed in the National Register of Historic Places are not eligible for the ten percent credit; therefore, owners of historic buildings denied certification for the twenty percent credit may not claim the ten percent credit. Tax credits are useful only to the extent taxes are otherwise owed.

Reference for Further Information: For general information contact National Park Service, Room NC200, 1849 C Street, NW, Washington, DC 20240; Phone: 202-343-9578; E-mail: hps-info@nps.gov. For federal tax rules, contact the Internal Revenue Service, Washington, DC 20224; Phone: 1-800-829-1040; Internet: www.irs.ustreas.gov/. For application forms and instructions, contact the appropriate State's historic preservation office.

RISK MANAGEMENT AND INSURANCE

Description: Risk management and insurance can be a key ingredient in a long-term cost reduction strategy. Risk management is the process of managing risk exposure to achieve objectives in a manner consistent with public interest, human safety, environmental factors, and the law. It consists of planning, organizing, leading, coordinating and controlling activities with the intent of providing an efficient pre-loss plan that minimizes the adverse impact of risk on the organization's resources, earnings and cash flows. Risk management involves systematic, continuous investigation of risk loss exposures, evaluation of their nature, frequency, severity and potential impact on the organization, and planning, organizing and implementing appropriate risk control and risk financing techniques to minimize loss impacts on the organization. Effective risk management is needed to avoid adverse effects on an organization's credit rating and cost of capital. Frequently, risk management involves risk transfer via purchase of insurance or other specialized financial instruments (derivatives). The insurance industry includes property and casualty insurers that underwrite the financial risks associated with potential environmental liabilities. Some environmental risks impose potential losses greater than associated profit opportunities. For example, the potential contamination of brownfields can impose liability risks that severely inhibit redevelopment and reuse of such property (see **Section 9., Environmental Insurance**).

Actual Use: Virtually all organizations of significant size exercise some type and degree of risk management, if only the purchase of commercial umbrella liability insurance coverage. Risk transfer mechanisms such as environmental liability insurance are widely available.

Potential Use: Environmental insurance can reduce risks involved in brownfields redevelopment.

Advantages: Risk management lets officials avoid spending excessive time and attention in dealing with unanticipated losses. It protects cash flows, profitability, and growth for-profit firms.

Limitations: Insurance premiums can be prohibitively expensive for small organizations. The relative cost of insurance as policy limits decline, decreasing the feasibility of insurance for smaller transaction requiring lower coverages. Also, the uncertainties of future liability under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) are not eliminated by insurance if the insurer can seek payment from former owners of contaminated property under the Act's retroactive, strict, joint and several liability standard.

Reference for Further Information: American Risk and Insurance Association, c/o Chase Communications, PO Box 9001, Mount Vernon, NY 10552-9001; Phone: 914-699-2025; E-mail: aria@pipeline.com; Internet: www.aria.org/. National Center for Environmental Assessment; Phone: 202-564-3361. *Potential Insurance Products for Brownfields Cleanup and Redevelopment*, June 1996, PB96-963244, USEPA, Office of Emergency and Remedial Response.

VALUE ENGINEERING

Description: Value Engineering, also known as Value Analysis, Value Management or Function Analysis, focuses on cost reduction through function cost analysis and engineering. First, a product and all of its components are studied to determine their functions or purposes, then various analytical techniques such as functional analysis, economic analysis, cost analysis, and value-added analysis are used to provide a product with minimum essential function at lowest cost. Function cost analysis differs from activity-based costing (see **Section 6., Activity-Based Costing**) which considers engineering process improvement as a source of cost reduction. Value engineering studies involve information gathering, definition of functions, speculation on alternatives, and the evaluation of all alternative ways of meeting requirements.

Actual Use: Office of Management and Budget Circular A-131 (June 1993) and the National Defense Authorization Act for fiscal 1996 (Public Law 104-106) require federal agencies to establish and maintain cost-effective value engineering procedures and processes. The Department of Defense uses both value engineering incentives and program requirements, including value engineering clauses in procurement contracts. The Federal Highway Administration and the Bureau of Reclamation have used value engineering for design and construction projects for a decade. EPA Region 8 used a value engineering study for the California Gulch Superfund Site (Leadville, CO) which may result in cost reductions of as much as \$14 million. In the private sector, Toyota has integrated value engineering into its cost management process.

Potential Use: Value analysis can be applied to environmental protection projects, particularly infrastructure construction and hazardous waste clean-up, to reduce costs.

Advantages: In both public and private sector applications, value engineering can reduce costs while improving performance and client satisfaction.

Limitations: As practiced, value engineering is a powerful tool for cost reduction but generally does not deal with value as a function of quality, and ignores the fact that product choices are usually based on more than the minimum of essential product function. Importantly, it also may ignore certain environmental trade-offs.

Reference for Further Information: Contact Society of American Value Engineers, 60 Revere Drive, Suite 500, Northbrook, IL 60062; Phone: 847-480-1730; Fax: 847-480-9282; E-mail value@value-eng.org; National Aeronautics and Space Administration, Langley Research Center, Design for Competitive Advantage, Mail Stop 159, 18e West Taylor Street, Hampton, VA 23665-2199; Phone: 757-864-8213; Fax: 757-864-9713; Internet: mijuno.larc.nasa.gov/dfc/ve.html

OTHER

Description:

Actual Use:

Potential Use:

Advantages:

Limitations:

Reference for Further Information:

COMPARISON MATRIX FOR TOOLS FOR LOWERING COSTS

Criteria/ Tools	Actual Use	Revenue Size	Revenue Cost/ Savings	Admini- strative Ease	Equity	Environmental Impact
*Accelerated Depreciation	High	Mod. - High	High	Low - Mod.	Mod.	High
Activity-Based Costing	Mod.	Mod. - High	Mod.	Low	Low	Mod.
Amoritization of Pollution Control Facilities	Mod.	Mod.	Mod.	High	Low	Low - Mod.
*Appropriate Technology	Mod.	High	High	Mod.	Mod.	High
Barter and Payment-In- Kind	Mod. - High	Mod. - High	High	Mod. - High	Mod.	Mod.
Benchmarking	Low	Low	Low	Low - Mod.	High	Mod. - High
*Capital Planning and Budgeting	High	High.	High	Mod.	Low - Mod.	Mod. - High
*Comparative Risk Ranking	Mod.	Mod.	Mod. - High	Low - Mod.	High	High
*Cost-Benefit Analysis	High	High	Mod.	Mod.	Low - Mod.	Mod.
*Cost Effectiveness Analysis	High	High	High	Mod.	Low	Mod.

COMPARISON MATRIX continued

Criteria/ Tools	Actual Use	Revenue Size	Revenue Cost/ Savings	Admini- strative Ease	Equity	Environmental Impact
*Deduction of Agricultural Conservation Expenses	Mod. - High	Mod.	High	Low - Mod.	Mod.	High
*Discounting (Economic)	High	High	Mod. - High	Mod.	Mod.	Mod. - High
Employee Stock Ownership Plans	High	High	Mod.	Low - Mod.	Low	Mod.
EPA: Common Sense Initiative	Low	Mod.	Mod.	Mod.	Mod.	High
EPA: Project XL	Low	Low	High	Mod. - High	Low - Mod.	High
*Expensing of Assets	High	Mod.	Mod. - High	Mod.	High	Mod. - High
*Financial Capability Analysis	High	High	Mod.	Mod.	Mod. - High	High
Fiscal Impact Analysis	High	High	Mod.	Low - Mod.	Low - Mod.	Mod.
*Full-Cost Pricing	High	High	Mod.	Mod.	Mod.	High
Life Cycle Assessment/ Costing/Design	Mod. - High	High	Mod.	Low- Mod.	Low	Low - Mod.

COMPARISON MATRIX continued

Criteria/ Tools	Actual Use	Revenue Size	Revenue Cost/ Savings	Admini- strative Ease	Equity	Environmental Impact
*Pay-As-You-Go	High	High	High	Mod.	Mod. - High	High
*Pollutant Loading Allocation	High	High	Mod.	Low	Low - Mod.	High
*Refinancing Loans	High	High	High	Mod.	Low - Mod.	Mod.
*Reforestation Tax Credit and Amoritization	Mod. - High	Mod.	High	Mod.	High	High
*Regionalization	High	Mod. - High	High	Low - Mod.	Mod.	High
Rehabilitation Tax Credits	Mod.	Mod.	High	Mod. - High	Mod.	High
*Risk Management and Insurance	High	High	Mod. - High	Mod.	Low	High
Value Analysis	High	High	Mod.	Mod.	Low	Low

High - High use (over 25 States, many localities); criteria score high (cost-effective, easy to use, accessible, impacts specific projects)

Mod.- Moderate use (10-25 States, many localities); criteria score medium well

Low - Low or rare use; criteria score poorly (complicated, not cost effective or equitable to use, used for analytical purposes only)

* Star indicates best rated mechanism

**7. TOOLS
FOR
ENCOURAGING
POLLUTION PREVENTION
AND
RECYCLING**

7. TOOLS FOR ENCOURAGING POLLUTION PREVENTION AND RECYCLING

INTRODUCTION

When the Environmental Protection Agency (EPA) was created in the early 1970's its focus was on cleaning up and controlling the most immediate environmental problems. Over the next twenty years, the nation made huge investments in these efforts and realized major reductions in air, water, and land pollution. However, it became increasingly apparent over time that the traditional "end-of-the-pipe" approaches are expensive (increasingly so), not fully effective, and sometimes transfer pollution between environmental media.

To achieve needed additional improvements to environmental quality, environmental activities must move "upstream to prevent pollution before it occurs and to recycle waste wherever possible. The Pollution Prevention Act of 1990 recognized that pollution should be prevented or reduced at the source whenever feasible. USEPA defines pollution prevention as "source reduction" since that term is defined in the Act (see **Appendix E: Glossary**), and adds protecting natural resources through conservation and increased efficiency.

Pollution prevention is not the only strategy for reducing environmental risks, but it is the preferred one, followed by recycling. This priority is reflected in USEPA's environmental management hierarchy which includes:

- 1) pollution prevention;
- 2) recycling;
- 3) treatment; and
- 4) disposal or release.

Preventing pollution offers important economic benefits, as pollution never created does not need to be managed or cleaned up. Recycling means that wastes do not have to be disposed and that raw materials can be conserved. Pollution prevention and recycling have the potential to protect the environment and improve manufacturing efficiency and reduce the use of raw materials.

This section evaluates financing tools which States, communities, and the private sector can use to encourage pollution prevention and recycling. Seventeen ways of raising revenues, lowering costs, and influencing behavior are discussed. The tools range from traditional State and federal assistance programs to proven financial management techniques that encourage conservation and reuse to bold new financial management and investment strategies, programs, and techniques.

**LIST OF TOOLS FOR ENCOURAGING
POLLUTION PREVENTION AND RECYCLING
(In Alphabetical Order)**

1. Assurance/Performance Bonding
- *2. Demand-Side Management Pricing
- *3. Deposit-Refund Systems
- *4. Development Rights Purchases
- *5. Differential Pricing
6. Energy: NICE 3
7. EPA: Pollution Prevention Grants
- *8. Environmental Self-Auditing
- *9. Full-Cost Environmental Accounting
- *10. Green Code of Conduct (ISO 14000 Voluntary Environmental Standards)
- *11. Green Investments
12. Liability Assignment
13. Pollution Charges
14. Private Forest Banking
15. State Pollution Prevention (P2)/Recycling Loan Programs
- *16. Tax Incentive Programs
- *17. Transit Pass Subsidy Programs

* Stars indicate most highly rated mechanisms as described in the Comparison Matrix at the end of the narratives. See Introduction to the *Guidebook* for a description of the criteria used. Ratings of “High”, “Moderate”, and “Low” are for comparison purposes only, as some ratings are necessarily subjective and data are incomplete.

ASSURANCE/PERFORMANCE BONDING

Description: One method of incorporating social cost into decision making by polluters or developers is to require them to purchase dated assurance or performance bonds that reflect the full value of potential worst-case costs to remedied environmental damage resulting from their actions. The bond would be repaid in full (possibly with interest) at the time of maturity if the bondholder demonstrates that the potential damage has not occurred. The bond would be repaid in part if some level of damage less than the potential baseline has occurred, and would be forfeited if worst-case damages are incurred. If damages did occur, the bond could be used to remedy the environmental damages or to compensate injured parties.

Actual Use: Performance bonding is widely used in the construction business, to assure that work is completed within the specified time period. For environmental purposes, it has been used in surface mine reclamation programs to provide assurance that surface mined areas will be reclaimed and restored to a natural condition. These assurances are particularly helpful for obtaining debt for brownfields redevelopment projects.

Potential Use: An assurance/performance bonding requirement could be administered by a State regulatory agency, which would act as the bonding agency. If the bonds were administered through another agency, the regulatory agency would have to be integrally involved.

Advantages: Assurance/performance bonding is designed to incorporate environmental criteria and uncertainty (i.e., the process and extent of damages is uncertain prior to development) into the market system. This approach reflects the estimated cost of potential future environmental damages in the value of the bond. It provides a strong economic incentive to minimize damages and to develop innovative, cost-effective pollution control technologies.

Limitations: Although based on scientific information on potential damages, setting the value of the bond would still be a subjective decision dependent on numerous assumptions. Where the value of the bond is based on the cost of remediation or replacement, depending on the circumstances, it may not capture the full social cost of environmental damage. Setting bond values might be subject to lengthy legal challenges, requiring extensive documentation and possibly causing program delays.

Reference for Further Information: Costanza, Robert and Perrings, Charles, "A Flexible Assurance Bonding System for Improved Environmental Management," *Ecological Economics* (1990), pp. 57-75.

DEMAND-SIDE MANAGEMENT PRICING

Description: This is a unit pricing structure that is sensitive to the timing of usage (demand) during a utility system's peak hours or peak days. Usage that occurs during these peak periods is charged at a higher rate. The structure is designed to result in more accurate pricing for the usage which occurs during a system's peak demand periods. Utilities must incur additional capital and operating costs to develop the capacity to meet peak demands. Through demand-side management pricing, these additional costs can be shifted to those customers who create the need for the peak period capacity. Such pricing also tends to reduce peak demand by causing system users to reduce their use of the system or at least shift some portion of their usage to non-peak periods. As a result, the utility can "shave" operating costs and stretch existing investment, or reduce future investment in facilities necessary to meet peak period demands.

Actual Use: The demand-side management pricing structure is most commonly used by electrical, gas, and communications utilities, and less frequently by water or sewer utilities. Demand-side management pricing has also been used for a considerable number of years by the airline industry. More recently, it has been adapted to transportation facilities, including roads and bridges, through the use of time-sensitive (rush hour-based) tolls. This type of pricing structure is used most extensively by utilities and other parties which have the capability of metering usage by time of day.

Potential Use: The use of this pricing technique could be extended to other utilities and public infrastructure for which user fees are charged, and for which time of use can be determined, such as park and recreation facilities. Its adoption by water and wastewater utilities could also be greatly expanded if better systems of measuring use were implemented. Demand-side management pricing may have valuable application by these latter utilities with regard to stormwater management.

Advantages: The pricing structure shifts costs to those users who place the greatest demand on the system, creating greater equity in pricing and maximizing the user pays principle. It can significantly reduce or shift demand to less costly periods, and help to avoid costly, and maybe, unnecessary future capital investment required to meet peak demands.

Limitations: The technique requires the ability to monitor consumption by individual users at different times. Only a few water and wastewater systems have this ability. It requires expensive, special metering equipment and billing systems which can accommodate variable rates. Poor customers who cannot shift or reduce their usage are penalized by the resulting higher prices.

Reference for Further Information: USEPA, Office of the Comptroller, Environmental Finance Program, 401 M Street, SW, Washington, DC 20460. Mail Code: 2731R. Contact: Timothy McProuty at mcprouty.timothy@epa.gov.

DEPOSIT-REFUND SYSTEMS

Description: Improved price signals can reduce the volume of waste that is reaching our landfills and incinerators. One kind of improved price signal, the deposit-refund system, combines a special front-end surcharge (the deposit) on a particular substance or product with a refund payable to the consumer when quantities of the substance or product in question are turned in for recycling or proper disposal.

Actual Use: Historically, deposit-refund systems have been applied primarily at the State level. The systems have typically applied to glass, aluminum, plastic, or other containers, such as drink bottles and cans. Many States have a five cent deposit-refund on soft-drink bottles and cans. However, such systems are now being expanded to include other types of products. For example, in some areas they are being applied to office products, such as photocopy machine toner cartridges. States such as Maine and Rhode Island have established deposit-refund systems to encourage the recycling of lead-acid/automobile batteries.

Potential Use: These systems could be expanded to include many other types of products. They could be applied to containers that hold chemicals or other environmentally hazardous products. Lead-acid/automobile batteries may be good candidates for inclusion in deposit-refund systems nationwide. Other possible candidates for these recycling systems include motor oil, other automobile fluids, and pesticide containers. For some substances and problems, a federal deposit-refund system might be appropriate. This would be the case when dealing with products that have national markets, are easily transported, and have uniform recycling characteristics and consequences.

Advantages: Deposit-refund systems can be placed on any product which is currently disposable and contains materials that can be reused. It also provides an incentive to recycle and therefore reduces the quantity of solid waste produced. Deposit-refund systems can assist regulatory agencies in accomplishing their enforcement and compliance program objectives by reducing the need for additional regulatory resources while simultaneously augmenting agency efforts.

Limitations: Under this type of system, consumers, not producers bear the economic burden. The market for raw materials in product of deposit-refund system needs to be identified.

Reference for Further Information: Stavins, Robert, N. And Whitehead, Bradley W., Progressive Policy Institute, Policy Report No. 13, *The Greening of America's Taxes: Pollution Charges and Environmental Protection*, February 1992.

DEVELOPMENT RIGHTS PURCHASES

Description: Purchasing development rights, often on agricultural or forest lands, is the buying of the legal "right" of the owner, or subsequent owners, to develop land for residential or commercial uses. Existing land uses are usually maintained, although bans on development may be limited, i.e., allowing some low density development. These rights are bought by State and local governments and/or nonprofits groups. They are like conservation easements, since both entail partial ownership via deed restrictions, contracts or covenants, as opposed to fee-simple transfer of ownership. But, development rights purchases often entail payments to land owners, contrasted to the preferential tax treatment of conservation easements. Buying the rights restricts development whereas conservation easements may require more land management such as soil conservation and plant maintenance to protect water quality and natural habitats (see also the related tool at **Section 8., Conservation Easements**).

Actual Use: Nonprofit organizations have been buying development rights for many years. Recently, government purchases capitalized by bonds and special taxes have been growing rapidly. For example, Peninsula Township, Michigan funds purchases with a small property tax increase assisted by a grant from the State's Conservation Trust Fund. Pittsford, New York issues bonds to buy development rights. New York State's annual debt service payments on its mega-environmental bond, which pays for farmland preservation, are financed by the real estate transfer tax. Virginia Beach, Virginia and Howard County, Maryland buy development rights at market value on an installment basis by making interest-only tax-exempt payments to landowners for 25 and 30 years, respectively, and paying the principal at the end. The landowner thus defers capital gains. The balloon payment is guaranteed by municipal investments in zero interest Treasury bonds.

Potential Use: Any rural or urban site, including green space, forests, wetlands and ranch lands, can be protected from development. Additional environmental protection work could be added to the development rights deed restrictions similar to conservation easements.

Advantages: Partial ownership through deed restrictions, contracts and covenants, is much less costly than outright ownership. Local financing encourages maximum local citizen involvement.

Limitations: The program is voluntary, and some difficult negotiations still may fail. Revenues must be raised to cover costs, so widespread local agreement must exist. Development rights purchases may provide protection only against development, and not for other ecological purposes.

Reference for Further Information: Henry Diamond and Patrick Noonan, *Land Use in America*, Lincoln Institute of Land Policy, Island Press, 1996; American Farmland Trust, *Forging New Protection: Purchasing Development Rights to Save Farmland*, and *Saving America's Countryside*, Washington, D.C., 1996, Telephone: 202-659-5170; The Trust for Public Land, *GreenSense: Financing Parks and Conservation*, Phyllis Myers, editor, San Francisco, CA, Spring 1998.

DIFFERENTIAL PRICING

Description: Differential (nonlinear) pricing, including declining block rates and progressive rate systems, as opposed to single tariff pricing, gives utilities flexibility to handle demand management and service affordability issues. Inclining block rates, peak hour and/or day surcharges, seasonal rates, and excess loading surcharges are forms of conservation pricing. In these systems, the unit price rises as use rises or the time period changes, giving customers a real and growing incentive to control use. Increasing block-rate systems charge higher unit prices for higher levels of usage. By contrast, with a declining block rate the unit price decreases when consumption exceeds a threshold amount. This form of marginal cost pricing recognizes that high volume users may contribute to economies of large scale for a facility or service. Single tariff pricing spreads costs over a wider population so that service to high-cost areas is subsidized by areas with greater cost efficiency. Utility design can affect demand for services as it affects the ability of businesses and households to pay for them. For example, a lifeline rate bills a relatively low price for basic, essential service (See also **Section 6., Full-Cost Pricing; Section 7., Demand-Side Management Pricing; Section 1.B., Local Water/Wastewater Utility User Fees; and Section 1.B., Solid Waste Disposal Fees**).

Actual Use: Although rate structures vary widely, most utilities use some form of differential pricing in their rate structures. These include toxicity charges for industrial wastewater and incentive rates for off-peak use.

Potential Use: Differential pricing can be used for various purposes, including promotion of water conservation (increasing block rates), savings for low-income households, encouragement of industrial location (decreasing block rates), energy conservation (peak use surcharge), and land use growth control (increasing block rates).

Advantages: Not only utilities, but also other agencies that charge fees may be able to use a rate structure to pursue environmental goals while ensuring adequate revenues and serving socio-economic equity objectives.

Limitations: Rate structures are not easy to change, particularly if they must be approved by a local legislative body or state public service commission. Most rate structures are somewhat regressive (insensitive to ability to pay), therefore may be considered socially inequitable. Differential pricing can be complicated by attempts to deal with multiple issues. Some variations also can reduce collectibility in small communities experiencing high rates due to diseconomies of small scale.

Reference for Further Information: Raftelis, George, *Comprehensive Guide to Water and Wastewater Finance and Pricing*, second edition, CRC Press/Lewis Publishers; *Revenue Requirements*, Manual M35, 1990, *Alternative Rates*, 1992, and *Water Rates and Related Charges*, Manual M26, 1996, American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235, Telephone: 800-926-7337 or 303-794-7711, Internet: www.awwa.org/.

DEPARTMENT OF ENERGY
NICE 3

Description: This Department of Energy (DOE) program gets its acronym from its purpose -- to promote National Industrial Competitiveness through Energy, Environmental, and Economics. The NICE 3 program seeks to support via cost-sharing grants the development of new processes and/or equipment to reduce the generation of wastes and green house gases and to conserve energy and energy-intensive feedstocks. The program gives preference to proposals that use pollution prevention and integrate pollution prevention and recycling approaches. It focuses on States and industries with high energy consumption and pollution problems, including chemicals and allied products (SIC 28), petroleum and coal products (SIC 29), paper and allied products (SIC 26), and primary metal industries (SIC 33). Eligible applicants include States in partnership with industry, and three-year projects are funded at 45 % DOE federal funds and 55 % industry and State monies.

Actual Use: The NICE 3 program obligated grants totaling \$5.8 million in Fiscal Year (FY) 1997, and estimates for FYs 1998 and 1999 are \$6 million, respectively. In FY 1997, grant assistance ranged from \$69,000 to the legal maximum of \$425,000 and averaged \$310,000. Projects funded include one in Oregon to recycle raw glass by removing contaminants, one in Ohio to reclaim and reuse wastewater in a water-based paint plant, a New York project to develop an approach to identify optimal volatile organic compound control strategies for industrial facilities, and one in Texas to develop a methanol recovery process for hydrogen peroxide production.

Potential Use: There are an abundance of unexplored and /or untapped opportunities for improving pollution prevention, recycling and energy processes and strategies in many, if not all, of the industrial sectors of the nation's economy.

Advantages: The NICE 3 program is highly leveraged in that it requires industry and States provide a substantial cost-share in order to be able to receive DOE federal funds. The program concentrates its assistance by focusing on those States and industrial sectors with energy consumption and pollution problems.

Limitations: The program's focus on four specific industrial groups may limit the resources that can be used to help other industries. The cost-share requirement may limit the ability of some industries/firms to take part in the program. The three-year project period may eliminate some good longer-term projects. Federal reporting, documentation, and auditing requirements can be extensive.

Reference for Further Information: U.S. DOE Headquarters, E-22, Room 5F-067C, 1000 Independence Avenue, SW, Washington, DC 20585. Telephone Number: 202-586-1641. USEPA, Office of Pollution Prevention and Toxics, 401 M Street, SW, Washington, DC 20460. Telephone Number: 202-260-3557.

ENVIRONMENTAL PROTECTION AGENCY POLLUTION PREVENTION GRANTS

Description: The Environmental Protection Agency (EPA) Pollution Prevention Grants Program awards these project grants to support the establishment and expansion of State pollution prevention programs and address sectors of concern such as industrial toxics, agriculture, energy, and transportation. The program is focused on demonstrating the value of making multimedia pollution prevention an environmental management priority. Eligible recipients include the States, the District of Columbia, the U.S. Virgin Islands, the Commonwealth of Puerto Rico, any territory or possession of the United States, any agency or instrumentality of a State, including State universities, and all federally recognized Indian Tribes. While local governments, private universities, and private nonprofit organizations are not eligible to receive funding, EPA encourages eligible recipients to work with these groups. Grant recipients must contribute at fifty percent of the total cost of their project in dollars or in-kind goods and services.

Actual Use: These grants are used to fund a wide range of pollution prevention projects that build State pollution prevention capabilities and test innovative pollution prevention approaches. Types of projects funded include technical assistance, data collection and dissemination, education and outreach to business and government personnel, training, environmental auditing, technology transfer, demonstration projects, and integration of pollution prevention in State regulatory programs. During fiscal year 1997, the EPA obligated \$4.9 million in these grants to fifty-seven State and Tribal agencies. Grant assistance ranged from \$20,000 to \$200,000 and averaged \$75,000. The Agency projects it will obligate approximately \$5 million in pollution prevention grants in FYs 1998 and 1999, respectively.

Potential Use: These grants are available for a broad and growing range of pollution prevention uses.

Advantages: The grant assistance is highly leveraged through the fifty percent match required of grant recipients. The assistance is limited to use for pollution prevention related purposes.

Limitations: Some potential recipients may have their grant amount limited by their ability to raise the fifty percent match. Local governments, private universities and other private nonprofits are not eligible for assistance and may not be included as project partners in some States.

Reference for Further Information: U.S. EPA, Office of Pesticides and Toxic Substances, 401 M Street, SW, Washington, DC 20460, Mail Code: 7401, Telephone Number: 202-260-3810, Fax Number: 202-260-0575. Information on these grants is also available in the *Catalog of Federal Domestic Assistance* and its Internet site at <http://aspe.os.dhhs.gov/cfda/ideptaa.htm>. This is the page for the Independent Agencies, select EPA.

ENVIRONMENTAL SELF-AUDITING

Description: Environmental self-auditing, as used in here, relates to voluntary efforts by corporations and other organizations to focus not just on environmental compliance, but also on how efficiently they comply with environmental regulations or how to improve their environmental performance. The voluntary efforts are accomplished by detailed tracking and reporting on a wide range of environmental performance measures. These performance measures include not only traditional output measures such as the number of Notices of Violations and total emissions, but also new, non-traditional measures. Some examples of non-traditional measures are percent of energy usage per unit of output or product managed, number of self-identified environmental audit issues compared to the total number of such issues, percentage of issues resolved within established time frames, and percentage of operating and other personnel receiving environmental training.

Actual Use: Private companies in the forefront of developing these new, more comprehensive self-auditing programs include Waste Management Technologies, Inc., the 3M Corporation (through its famous Pollution Prevention Pays program), Tenneco Gas, and Browning-Ferris Industries. The Illinois EPA (IEPA) in cooperation with Arthur Andersen & Co. has worked on exploring and developing a range new corporate performance measures that better reflect company priorities and performance trends. Some of the companies involved in the IEPA project included Abbott Laboratories, Amoco Corporation, Caterpillar, Inc., Monsanto Co., and Sundstrand.

Potential Use: Corporations, governmental organizations, and non-profit groups nationwide could voluntarily develop and adopt self-auditing programs employing more effective measures of environmental performance.

Advantages: Such programs could allow the corporations and other organizations to better understand their environmental performance and operations. Using this knowledge, they could design programs and processes to operate more efficiently/effectively and to improve their financial performance. Based on the experiences of companies such as 3M, they might be able to re-engineer entire systems and cut waste by up to 35 percent or more.

Limitations: It is not easy to develop and establish comprehensive, cost-effective measures of performance. It requires expertise, time, and resources, that not all companies or organization may have, or be able to access.

Reference for Further Information: Van Epps, Ronald E. and Walters, Susan D., *Measure for Measure: Evaluating Environmental Performance with Tact and Insight*, Corporate Environmental Strategy, The Journal of Environmental Leadership, Volume 3, Number 2.

FULL-COST ENVIRONMENTAL ACCOUNTING

Description: This is a financial and management cost accounting method that allocates all direct and indirect historical costs, including embedded environmental ones, to a product, process, or activity over its life. The method uses three important concepts: full-cost accounting, environmental cost accounting, and life-cycle costing. Full-cost accounting allocates historical costs. Environmental cost accounting brings in environmental costs and ties them to the product, process, or activity. Finally, life-cycle costing identifies the effects of the product, process, or activity at each life-cycle stage (raw materials acquisition, manufacturing, use/reuse/maintenance, and recycle/waste management) and assigns those effects monetary values. Together, the concepts help incorporate in decisions the hidden costs which can hinder efficient management and environmental protection.

Actual Use: The use of full-cost environmental accounting, as well as its component concepts and related approaches, is in its infancy but slowly growing. For example, federal facilities are required under Executive Order 12586 to apply life-cycle analysis and total-cost accounting (a synonym for full-cost accounting) when estimating pollution prevention opportunities. USEPA's Environmental Accounting Project is working with over 650 different individuals organizations including more than 150 from industry. Project case studies include environmental accounting efforts at AT&T and full-cost accounting work at Ontario Hydro, the Canadian power company.

Potential Use: Every organization could adopt these techniques or some combination of them. International standards are under development to encourage companies and governments to better manage their environmental costs. For example, the International Organization for Standardization (ISO) is developing a series of voluntary environmental management standards entitled ISO 14000. These standards could become requirements for conducting trade and business worldwide.

Advantages: Not only are great environmental benefits to be gained from internalizing the value of environmental resources and the costs of damaging them, but large economic efficiencies may be gained from reducing current costs as well as future liabilities.

Limitations: There is a need to decide on clear standards for all of these terms and to make their use universal or major competitiveness concerns arise. This is a major change and may not occur easily or without some significant short-term costs and economic dislocations.

Reference for Further Information: USEPA, Office of the Comptroller, Environmental Finance Program, 401 M Street, SW, Washington, DC 20460. Mail Code: 2731R. USEPA, Office of Pollution Prevention and Toxics, Pollution Prevention Division, 401 M Street, SW, Washington, DC 20460. Mail Code: 7409. Phone No: 202-260-3557. Information on USEPA's Environmental Accounting Project is available on the World Wide Web at <http://www.epa.gov/opptintr/acctg/>.

**GREEN CODE OF CONDUCT
(ISO 14000 VOLUNTARY ENVIRONMENTAL STANDARDS)**

Description: The International Standards Organization (ISO) has published several standards in its Environmental Management Series covering Management Systems and Auditing to help businesses build sound environmental management/processes into existing systems and practices. These standards have been approved by the American National Standards Institute as American National Standards. The identifying numbers and titles for the standards are as follows: ISO 14001 Environmental Management Systems - Specifications with Guidance for Use; ISO 14004 Environmental Management Systems - General Guidance on Principles, Systems, and Supporting Techniques; ISO 14010 Guidelines for Environmental Auditing - General Principles; ISO 14011 Guidelines for Environmental Auditing - Audit Procedures, Auditing of Environmental Management Systems; ISO 14012 Guidelines for Environmental Auditing - Qualification Criteria for Environmental Auditors; ISO 14020 Environmental Labeling; ISO 14031 Environmental Performance Evaluation; ISO 14040 Life Cycle Assessment; ISO 14050 Terms and Definitions; ISO 14060 Environmental Aspects of Product Standards. ISO 14001 is the key standard, containing a pattern of specifications that must be followed if an organization is to be recognized as adhering to ISO 14000. Requirements include a statement of environmental policy, environmental objectives and targets, and procedures to monitor activities that can have significant impact on the environment.

Actual Use: ISO 14000 is being adopted voluntarily by U.S. businesses, particularly those involved in exporting.

Potential Use: Although aimed primarily at industrial situations, the standards could be applied to other organizations and activities.

Advantages: If they have sufficient scope and rigor to achieve environmental improvement, widespread adoption of voluntary standards of conduct can reduce societal costs otherwise imposed by negative environmental externalities produced by businesses and government agencies.

Limitations: Voluntary codes or standards of conduct depend on effective communication, the practicability of implementation, and the willingness of institutional leaders to support adoption.

Reference for Further Information: American National Standards Institute, 11 W. 42nd St., NY, NY 10036; Phone: 212-642-4900; Internet: web.ansi.org/public/iso14000/default.htm; International Organization for Standardization, 1, Rue de Varembe, Case postale 56, CH-1211 Geneve 20, Switzerland; Phone 41-22-749-0111; E-mail: central@iso.ch; Internet: www.iso.ch/; Coalition for Environmentally Responsible Economies, 11 Arlington St., 6th Floor, Boston, MA 02116-3411.

GREEN INVESTMENTS

Description: Green investments are financial investments in companies, financial institutions, monetary funds, and/or other financial entities that to the extent practicable or possible do not engage in, or support organizations that engage in, environmentally harmful behavior. Green investments are deliberate decisions to make informed financial investments that incorporate environmentally responsible behavior. They are made with profit in mind, but tempered by environmental concerns.

Actual Use: There are substantial and growing number of banks, mutual funds, financial networks, financial management companies, and firms advertising claims that their behavior is socially and/or environmentally responsible. For example, the Calvert Group offers the nation's largest family of socially and environmentally responsible mutual funds with screened assets under management exceeding \$1.4 billion in stocks, bonds, and money market funds. The Bank of America has a strong program to assist "green" companies with funding. Earth Tones is a long distance telephone company that gives 100% of its profits to environmental campaigns and prints its bills on recycled papers along with Green Alert updates about pressing environmental issues. There are also firms that provide screening services for investors to determine the validity of green advertisements.

Potential Use: The potential for growth in green investments is good as people become more environmentally aware. As these investments develop proven track records of financial success, they will attract more investors. Given their small current size compared to financial markets, they represent an area ripe for further growth.

Advantages: Returns on green investments can be as good or better than most regular investments. Between May 1990 and December 1994, an index of 400 socially responsible firms (includes environment considerations) outperformed the S&P 500 by 70.41 percent to 60.38 percent. Environmentally responsible investments offer an alternative to ones that involve environmentally harmful behavior, take money away from these investments, and may encourage organizations to review and reevaluate their environmental behavior.

Limitations: These investments options are minuscule in size relative to all investment vehicles; and some lenders report a dearth of funding opportunities. Not every investor is environmentally motivated. The range of green investments are not well-publicized, disingenuous advertising occurs, and improved screening of potential investments is needed.

Reference for Further Information: *Social Funds Guide To Environmentally & Socially Screened Mutual Funds* and *Directory of Information Resources for Socially & Environmentally Concerned Investors, Consumers and Business People*, Good Money Publications, 1995.

LIABILITY ASSIGNMENT

Description: Assignment of liability pertains to insurance markets where premiums would reflect the relative degree of risk that activities pose to the environment. Premiums send price signals to polluters and provide incentives (i.e., the possibility of lower insurance costs) to modify behavior and reduce risks. Liability release also is included here and refers to the removal of liability for pollution or contamination.

Actual Use: Liability is assigned through common law (negligence) or environmental statutes. Liability rules provide incentives to prevent pollution or to avoid behavior that will result in paying damages to aggrieved parties. The Resource Conservation and Recovery Act (RCRA) program includes a financial responsibility requirement under which disposers of hazardous substances must show they can handle the costs of corrective action. This encourages companies to buy insurance to cover the costs of potential damages and provides incentives to avoid releases of hazardous wastes or constituents into the environment. Liability standards are also a way to fund remediation activities, i.e., responsible parties are liable for cleanup costs under the Superfund program.

Potential Use: Liability assignment could be used for many types of pollution problems to provide incentives to modify behavior. Liability assignment may be more practical, and have a more direct incentive effect, in circumstances where the relationship between activities and environmental damage is clearly defined. Liability release is commonly used for brownfields applications. A liability release shields property owners from all liability, providing they are in no way responsible for the original contamination. It is intended to encourage prospective purchasers to clean up contaminated property, without exposing them to the risk of being held liable for the original contamination. It may be granted prior to cleanup, and may be conditional on an intention to clean and reuse the site.

Advantages: Where insurance premiums accurately reflect the degree of risk, or the expected frequency and severity of damages, then companies have a financial incentive to take actions that reduce their potential liability.

Limitations: It may be difficult for insurers to underwrite risks for certain types of behavior. In some cases, insurers have been unwilling to write liability policies, and thus insurance markets have not developed as expected. In addition, the unpredictability of court decisions on damage awards makes it difficult for polluters and their insurers to assess potential risks.

Reference for Further Information: Moore, John L., et. al., *Using Incentives for Environmental Protection: An Overview*, Washington, DC, Congressional Research Service, June 2, 1989.

POLLUTION CHARGES

Description: Pollution charges are fees or taxes imposed on polluters based on the amount of pollution generated, rather than the level of pollution-generating activity. Sometimes, the charges can be based on a product's potential pollution. True pollution charges give producers or consumers incentives to reduce polluting behavior by making it a less expensive alternative. These charges reduce economic market inefficiencies by discouraging undesirable activities that have external or unaccounted for costs. They force firms and consumers to pay for the health and environmental consequences of pollution. They can spur technological innovation, as polluters look to cut pollution and its costs (see **Section 1.C., Effluent Charges** and **Emission Charges**, respectively).

Actual Use: While the U.S. does not have much experience with pollution charges, there are some examples at the State and local levels. Under the Colorado Pollution Prevention Act of 1992, the State levies chemical inventory fees on certain hazardous and extremely hazardous waste generators that exceed the threshold planning quantities under the Superfund Amendments and Reauthorization Act. At the local level, some cities have instituted volume charges for solid waste collection and disposal to reduce (through prevention and/or recycling) the amount of waste going to landfills. A number of European nations have considerably more experience with pollution prevention charges including Germany, the Netherlands, the Scandinavian countries, and Great Britain.

Potential Use: Pollution charges could be implemented by any and all levels of government throughout the U.S. These charges might also be more appropriate and effective than traditional "end of the pipe" regulatory approaches in addressing problems such as nonpoint source water pollution and air pollution from small sources. This is because they force producers and consumers when making economic decisions to decide either prevent pollution or pay for it up front.

Advantages: Pollution charges encourage pollution prevention and technological innovation. They make the polluter pay and can lead to savings over the cost of traditional regulation. As noted above, these charges may be able to better address small source, nonpoint source pollution problems. They also could improve the efficiency of the tax system by accounting for the external costs of pollution.

Limitations: It may be difficult to determine the true costs of pollution and thus the proper levels for pollution charges. There may be business competitiveness issues involved in implementing these charges. Governments may have difficulty in switching to a new, relatively untested tax approach.

Reference for Further Information: Stavins, Robert, N. and Whitehead, Bradley W., Progressive Policy Institute, Policy Report No. 13, *The Greening of America's Taxes: Pollution Charges and Environmental Protection*, February 1992. U.S. EPA Report to Congress, *Alternative Funding Study: Water Quality Fees and Debt Financing Issues*, Syracuse University, June 1996; Congressional Research Service, *Funding Water Quality Programs*, 1992.

PRIVATE FOREST BANKING

Description: This is an emerging tool whereby a privately created Forest Bank accepts deposits from forest owners in the form of the permanent rights to grow, manage and harvest trees on their land. In exchange, the landowner receives guaranteed annual payments of interest-only on the "principal" (i.e., the assessed market value of the timber at time of deposit in the Bank), a right to withdraw principal revenue on demand, and a guarantee that the timber will remain forever as forest. Forest owners also are assured that trees will be harvested and marketed in an ecologically sound manner. This concept has been practiced for private mineral rights for some time, but private banking of timber rights is a new business idea developed by the Center for Compatible Economic Development (CCED), a distinct operating unit within The Nature Conservancy. For a closely related tool, see **Section 8., Land Trusts and Reclamation Banks.**

Actual Use: The Forest Bank concept is aimed primarily at non-industrial private forest owners, including very small owners. The first timber rights to be deposited in the Forest Bank will be 5000 acres around the Clinch River in Virginia. The Forest Bank is structured as a limited liability corporation operating for profit, but it is partially owned by the nonprofit Center for Compatible Economic Development. Initial capitalization of the bank may require the sale of bonds. It is anticipated that landowners depositing timber rights will withdraw principal, averaging 10-20 percent a year, in addition to annual interest payments, to meet liquidity requirements.

Potential Use: The concept is applicable nationwide, and could be extended to ranching.

Advantages: The Forest Bank uses private market incentives to answer the needs of forest owners who are uncertain how to manage timber to maximize short-term dollar return while at the same time protecting forest ecology over the long term. The Bank removes the responsibility of landowners to access up-to-date secondary and tertiary markets for ecologically sound forest products. Although conservation easements may be used as an alternative to forest protection, and landowners may receive some financial assistance and/or tax relief from several U.S. Department of Agriculture programs, this approach may offer more monetary return to the landowner.

Limitations: The Bank is still in its infancy. A private bank may be somewhat more risky than a federal similar government program, because it is new, relies in large part on marketing incentives, may compete with more aggressive timber cutting sales, and is guaranteed only indirectly by the financial resources of The Nature Conservancy.

Reference for Further Information: Kent Gilges, Center for Compatible Economic Development (CCED), The Nature Conservancy, 315 Alexander Street, Rochester, NY 14604, Telephone: 716-232-3530, Fax 716-546-7825, E-mail:kgilges@inc.org.

STATE POLLUTION PREVENTION (P2)/RECYCLING LOAN PROGRAMS

Description: These are State funded loan programs that support pollution prevention and/or recycling activities and businesses, particularly with regard to small businesses. They may be direct loan programs requiring annual appropriations support, or revolving funds that recycle a one-time capitalization amount using repayments from earlier loans to make new loans. Eligible projects may include any pollution prevention and/or recycling activity or may be tied to specific activities outlined in a State waste management, pollution prevention, and/ or recycling plan.

Actual Use: Connecticut, Colorado, Maine, Massachusetts, Minnesota, New Jersey, Ohio, and Pennsylvania have pollution prevention, recycling direct loan, or revolving loan fund programs. States considering or developing programs include Arkansas, Montana, New York, and West Virginia. Each State program has unique purposes, loan terms, and eligibilities. For example, Ohio has a \$10 million Pollution Prevention Loan Program that is a revolving fund. The program makes low-interest loans for construction and equipment purchases for pollution prevention activities at small-to medium-sized businesses. Loans range from \$25,000 to \$200,000 per facility and cannot exceed 75 % of the fixed asset costs of the facilities serving as collateral. The RENEW Loan Program in Colorado is very different. It gives close to prime rate loans to any business with a recycling or waste component to purchase equipment, real estate or use as working capital. RENEW is funded from a voluntary fee which tire retailers collect from new tire buyers for each old tire.

Potential Use: Because such programs offer good interest rates and/or flexible financing terms and small businesses frequently need loan support, these programs could be expanded to any State with adequate numbers of small businesses and willing/able to fund the start-up and capitalization costs. Clean Water State Revolving Funds are beginning to make loans for recycling projects, which will substantially increase the amount of funding nationwide (See Section 2B: State Revolving Funds).

Advantages: State loans for small businesses increases the likelihood that pollution prevention and recycling activity will move forward in a timely fashion, or at all. It enhances the financial capacity of smaller firms which may not have the resources and collateral to afford commercial financing. In addition, revolving funds leverage State support by recycling loan monies over a period of years.

Limitations: Program funding is not large and many small businesses are only fair to poor credits. The programs need to be well publicized to capture private sector awareness and interest.

Reference for Further Information: Great Lakes Environmental Finance Center Draft Report (prepared for USEPA), *An Inventory and Assessment of Pollution Control and Prevention Financing Programs*, December 1996. Great Lakes EFC, The Urban Center, Cleveland State University, UB 215, Cleveland, Ohio 44115. Telephone Number: 216-687-4590. Fax Number: 216-687-9277. World Wide Web site: <http://www.csuohio.edu/glefc/>.

TAX INCENTIVE PROGRAMS

Description: Tax incentive programs offer inducements to private firms to encourage them to invest in pollution prevention (and pollution control) equipment and facilities. The inducements offered in these programs may include tax credits, property tax exemptions or abatements, and sales and use tax exemptions.

Actual Use: Numerous States have tax incentive programs that include pollution prevention expenditures as an eligible item. For example, Louisiana, Oklahoma, and Oregon give income tax credit to businesses that spend money on pollution prevention, recycling, and pollution control. Ohio, Texas, and West Virginia have property tax exemption or abatement programs for pollution control/prevention facilities and equipment. Louisiana, Ohio, Texas, and Virginia offer sales and use tax exemptions for environmental investments, including pollution prevention.

Potential Use: Many more States could set up tax incentives programs to encourage businesses to invest in pollution prevention and control. The federal government could establish a federal income tax credit program for pollution prevention investments. Some larger cities might derive real benefit from specialized property and sales tax exemptions for pollution prevention activities.

Advantages: These programs provide strong reasons for firms to make environmental investments, thereby contributing to pollution reduction and control. Since most governments have considerable experience with tax programs, establishing tax incentives programs for pollution prevention investment is technically very feasible. Tax incentive programs may encourage business to stay or locate in a particular State and community.

Limitations: Tax incentives programs take revenues away from governments and keep it in the private sector. Some jurisdictions may not be able to absorb, either financially or politically, such revenue losses. Since most environmental laws still primarily contemplate pollution control approaches, most tax incentive programs are used by business to help meet the costs of pollution control investments rather than pollution prevention ones.

Reference for Further Information: Great Lakes Environmental Finance Center Draft Report (prepared for USEPA), *An Inventory and Assessment of Pollution Control and Prevention Financing Programs*, December 1996. Great Lakes EFC, The Urban Center, Cleveland State University, UB 215, Cleveland, Ohio 44115. Telephone Number: 216-687-4590. Fax Number: 216-687-9277. World Wide Web site: <http://www.csuohio.edu/glefc/>.

TRANSIT PASS SUBSIDY PROGRAMS

Description: Public Law 103-172, the “Federal Employees Clean Air Incentives Act,” provides for the establishment of federal programs to encourage employees to commute by means other than single-occupancy motor vehicles. The purpose of this law is to improve air quality and reduce traffic congestion. One of the programs contemplated under the law is the offering of transit passes that subsidize employee use of public transportation. Such passes represent benefits that fall under the “Energy Policy Act of 1992.” This act amended section 132 (f) of the Internal Revenue Code to change the tax treatment of employer-provided “qualified transportation fringe” benefits by increasing the tax exclusion for transit passes from \$21 to \$60 per month and setting a new \$60 exclusion for van pools (\$60 is an aggregate limit). In other words, it specified that employees are not taxed for these employer-provided transit pass benefits.

Actual Use: Under these laws, the Environmental Protection Agency (EPA) implements the **EPA Transit Subsidy Program** in its offices across the country. In Washington, D.C., this is done through a farecard voucher system in partnership with the Washington Area Mass Transit Authority WAMTA. The farecard vouchers are issued by WAMTA in amounts up to \$60 per month for use by more than 2100 participating Agency employees. These vouchers are good for subway rides or they can be exchanged for equal fares on any other type of approved public transportation that serves the Washington, D.C., metropolitan area.

Potential Use: Transit pass subsidy programs such as this could be adopted by State and local governments across the country, as well as by private sector firms. While they might be most effective in large urban areas, they should be environmentally beneficial in any location.

Advantages: These subsidy programs can reduce pollution emissions (estimates for the federal program are 6.6 million metric tons of carbon equivalent by the year 2000), contribute to energy savings, and help reduce vehicular traffic congestion during rush-hour. They can reduce the need to construct new parking facilities, and reduce or delay the need for new highway expenditures. Finally, they raise the disposable income of employees taking advantage of such programs.

Limitations: Transit pass programs are subsidies that must be funded out of employer resources. There may be negative economic impacts on some business sectors by promoting mass transit.

Reference for Further Information: U.S. EPA, Office of the Comptroller, Environmental Finance Program, 401 M Street, SW, Washington, DC, 20460. Mail Code: 2731R. Contact: Timothy McProuty at mcprouty.timothy@epa.gov.

OTHER

Description:

Actual Use:

Potential Use:

Advantages:

Limitations:

Reference for Further Information:

COMPARISON MATRIX FOR POLLUTION PREVENTION/RECYCLING

Criteria/ P2 Tool	Actual Use	Revenue Size	Revenue Cost/ Savings	Admini- strative Ease	Equity	Environ- mental Benefits
*Assurance/ Performance Bonding	Low	?	Mod.	Mod.	Low- Mod.	Mod.- High
*Demand-Side Management Pricing	Mod- High	High	High	Mod.	Low- Mod.	High.
*Deposit-Refund Systems	High	Low	Mod.	Mod.	Mod.	High
*Development Rights Purchases	High	Mod.	High	Mod.	Mod.	High
*Differential Pricing	High	High	Mod.	Mod.- High	High	High
Energy: NICE 3	Low	Low	Mod.	Mod.	Low- Mod.	High
EPA: Pollution Prevention Grants	Low	Low	Low- Mod.	Mod.	Low	High
*Environmental Self-Auditing	Mod.	High	Mod.- High	Low- Mod.	Mod.	High
*Full-Cost Environmental Accounting	Low	High	Mod. - High	Low	Mod.	High
*Green Code of Conduct	Mod.	High	Low	Mod.	Mod. - High	High

COMPARISON MATRIX continued

Criteria/ P2 Tool	Actual Use	Revenue Size	Revenue Cost/ Savings	Admini- strative Ease	Equity	Environ- mental Benefits
*Green Investments	Low	High	Mod.	Mod.	Mod.	Mod. - High
Liability Assignment	Mod.	Mod.	Mod.- High	Low	Low- Mod.	High
Pollution Charges	Low	Low	Low- Mod.	Low	Low	High
Private Forest Banking	Low	Mod.	Mod.	Low	High	Mod. - High
*State P2/ Recycling Loan Programs	Mod.	Mod.	Mod.- High	High	Mod.	High
Tax Incentive Programs	Mod.	Mod.	Mod.	Mod.	Mod.	Mod.
*Transit Pass Subsidy Programs	Low	Low	Mod.	Mod.	High	High

High - High use (over 25 States, many localities/private sector); most environmental media covered (water, wastewater, solid waste and air); criteria score high (e.g., program lowers costs, is easy to use, readily available, and impacts special projects)

Mod. -Moderate use (10-25 States, some localities/private sector); programs include two or more environmental media; criteria score in the medium range.

Low - Low or rare use; scope is very limited; one or more major implementation problems exist

* Star indicates good mechanism for future use

**8. TOOLS
TO PAY FOR
COMMUNITY-BASED
ENVIRONMENTAL
PROTECTION**

**TOOLS TO PAY FOR
COMMUNITY-BASED ENVIRONMENTAL PROTECTION
(CBEP)**

INTRODUCTION

Community-Based Environmental Protection (CBEP) refers to the tailoring of environmental programs and revenue devices to the unique problems and goals of a particular place -- be it a watershed, ecosystem, or a community. The CBEP approach is designed to involve localities more intimately in the choice and use of financial mechanisms, maximize the use of scarce resources, enhance the popularity of environmental issues, and more readily involve the private sector in public improvements. CBEP seeks to better reflect regional and local conditions, environmental priorities, and economic goals.

Community-Based Environmental Protection funding approaches now are among the most innovative and fastest growing type of financing in this country today. The hallmark of CBEP tools is that most are voluntary, based on the acceptance and active participation of individuals, and involve both the private and nonprofit sectors in non-traditional roles. Any of the financial tools in this Guidebook can be fitted to local use and priorities, from fees and taxes, grants and loans, public-private partnerships, pollution prevention, to brownfields and small business mechanisms. However, the unique and highly innovative tools described in this section employ traditional forms of financing as the take-off point. They are designed to reward and encourage environmental protection, unite the public and private sectors in interdependent ways, and bend the forces of the economic marketplace toward these ends. In a sense, CBEP views the public and private sectors as interchangeable, with the government sector supporting the private sector and the latter assuming quasi-government roles.

Parks and recreation, open space conservation, and natural habitat protection currently are the most popular focus of innovative community-based environmental protection funding, and represent the area of greatest voluntarism with the nonprofit sector often taking the lead. Here, communities have adapted some structured funding approaches to meet their needs, such as formation of special districts, tax increment financing and special tax bonds, and even a portion of State lotteries. Dedicated trust funds, land trusts and conservation easements have been the target of both of public and private financing, including matching funds, special bonds, and SRF loans to pay for land easements, and corporate and individual donations. Mitigation banking and pollution trading represent a new type of private sector involvement, sometimes voluntary. Donations from "green" credit cards, affinity merchandise and license plates, and ecotourism are growing.

In short, the tools in this section capture the spirit, enthusiasm and love that Americans hold for specific regions, valuable natural locations and the places where they live. They depend also on the enlightened self-interest of individuals, private firms and governments. They finance long-term protection measures which are not necessarily the target or result of government regulation.

Advantages: A chief advantage of the majority of community-based environmental financing mechanisms is that they can generate a great deal of enthusiastic and voluntary support without causing much opposition. They are equitable, flexible and may result in considerable financial leveraging, as in the case of donations or special revenue-raising devices matched by government and private sector dollars and in-kind services, or investment proceeds and loan repayments to trust funds. While government voluntary mechanisms such as income tax check-offs or vanity auto license plates have not raised much revenue, similar private and nonprofit sector programs such as land or easement donations and in-kind services are huge. The novelty of mechanisms involving public and private sector funds advertises the need for environmental improvements and enhances the awareness of even the most reluctant participants. The cost/benefit relationship is particularly high when revenues go to specific local projects such as open space acquisition and protection.

Limitations: Government CBEP measures have been overshadowed by the success of the private and nonprofit sectors, with a few exceptions such as Department of Agriculture's conservation reserve program. While the revenue raising potential particularly of private and nonprofit sector measures is large, revenues may be unstable and unpredictable at times, fluctuating particularly with economic conditions and tax treatment of philanthropic activity. The use of lotteries have been controversial, since individuals purchasing lottery tickets may be those least able to pay, and environmental dedication has not always been assured.

Summary: No CBEP funding mechanism should be regarded as unimportant, because of the enormous potential to harness market forces, heighten environmental awareness, leverage additional resources, and join the public and private sectors in new ways. The focus of CBEP funding, moreover, whether communities or ecosystems, represents the new wave of environmental protection which relies on prevention and cooperation as opposed to regulation.

**LIST OF TOOLS TO PAY FOR
COMMUNITY-BASED ENVIRONMENTAL PROTECTION
(In Alphabetical Order)**

1. Adopt-An-Animal/Habitat Programs
2. Affinity Merchandise (License Plates, Stamps)
- *3. Agriculture: Farm Service Agency -- Conservation Reserve Program
4. Agriculture: Natural Resources Conservation Service -- Wetlands Reserve Program
5. Assurances
- *6. Capital Improvements Program
- *7. Community Foundations
- *8. Conservation Easements
- *9. Conservation Partnerships
- *10. Contributions of Land
11. Cost-Share for Livestock Waste Storage Systems
- *12. Dedicated Government Trust Funds
13. Ecotourism
14. Emissions Trading
15. Environmental Lotteries
- *16. Environmental Revolving Funds
17. Green Credit Card
- *18. Individual and Corporate Donations
- *19. Land Trusts and Reclamation Banks
20. Mini Bonds for Stream Restoration
- *21. Mitigation Lands and Banking
22. Municipal Utility Asset Sales
- *23. Non-Profit Organizations
24. Point Source/Nonpoint Source Trading
- *25. Special Districts (Special Purpose Districts, Regional Authorities)
- *26. Tax Increment Financing - CBEP

* Stars indicate most highly rated mechanisms as described in the Comparison Matrix at the end of the narratives. See Introduction to the *Guidebook* for a description of the criteria used. Ratings of “High”, “Moderate”, and “Low” are for comparison purposes only, as some ratings are necessarily subjective and data are incomplete.

ADOPT-AN-ANIMAL/HABITAT PROGRAMS

Description: These types of programs solicit individuals and corporations to adopt a special animal or species or habitat that is endangered or needs to be helped/improved. For a fee, interested parties support their animal or habitat through the purchase a kit of educational materials on their chosen animal or area. Programs can also include publicity and outreach campaigns where experts visit local schools, community centers, and parks to speak about an endangered or valuable local animal/habitat. The programs may sell the educational information kits at these events and publicize environmental curricula available at local schools.

Actual Use: A prime example of this approach is the now famous “adopt-a-whale program” which was created by the National Wildlife Federation. Another example is the adopt-a-beach program in California, which provides community outreach to schools and youth groups via a special curriculum promoting conservation of natural resources. This beach program is a joint effort of the California Coastal Commission, the California State Parks Foundation, and private corporate sponsors.

Potential Use: These programs could be initiated in attractive and popular areas throughout the nation that represent special habitats and contain threatened species. Examples of such areas could include estuaries such as the Chesapeake Bay, old-growth forests, beaches, as well as local parks, scenic spots, lakes, grassland, wetlands, or woods in any community. Examples of species that could be adopted include (but would not necessarily be limited to) animals such as eagles, condors, sand hill cranes, spotted owls, wolves, turtles, and manatees.

Advantages: This type of program persuades people to become involved in their community by focusing on an animal or habitat that they already prize, or that they can come to value. Furthermore, it accomplishes this purpose while at the same time raising money for environmental projects that benefit the local community or ecosystem.

Limitations: Animal and habitat adoption programs require start up capital and expertise for the development and acquisition of special environmental educational materials. Marketing campaigns can be very costly as well. The revenues raised are moderate at best and would only be a supplemental source of project funding.

Reference for Further Information: State of Maryland, *Financing Alternatives for Maryland's Tributary Strategies*, A Report From the Governor's Blue Ribbon Panel, 1994. University of Maryland Environmental Finance Center, University of Maryland, Coastal and Environmental Policy Program, 0112 Skinner Hall, College Park, Maryland 20742. Telephone Number: 301-405-6384. Fax Number: 301-314-9581. Web site - <http://www.mdsg.umd.edu/MDSG/EFC/index.html>

AFFINITY MERCHANDISE (License Plates, Stamps)

Description: States and localities, as well as the federal government, can sell various items and dedicate the revenues to environmental programs. Sometimes revenues are earmarked to site-specific environmental projects. Items sold range from the more traditional such as auto license plates and special postage stamps, to items such as governmental publications, maps, logo material such as decals (see also **Section 1.B., Franchise Fees**).

Actual Use: At least 32 States sell special edition license plates to fund the protection and clean-up of natural areas. The plates are decorated with environmental slogans and designs to show the car owner's support of a particular environmental cause. Over 10 million plates have been sold nationwide raising \$324 million. For example, Maryland and Virginia sell a special "Save the Bay" license plate for \$25-\$28 which generate over \$1 million a year in each State for the Chesapeake Bay program. Washington and Massachusetts operate similar programs. States and localities also issue and sell stamps, decals, clothing and prints depicting environmental resources. Nebraska and New Jersey sell stamps for \$7.50 and \$2.50, respectively, on every hunting license. The federal government and nearly all States have duck stamp programs to raise money for waterfowl and wetland projects, and postage stamps and reproductions are considered valuable collector's items. Hats and T-shirts may be sold for lake clean-up or recreational sites.

Potential Use: The potential list of items that might be marketed is long. For example, a share of the proceeds from items sold by authorized vendors on governmental parkland and recreational sites could be dedicated to specific environmental programs. There is little reason why governments could not act more like the private sector in selling special merchandise.

Advantages: Since the purchase of special affinity merchandise by individuals is entirely voluntary, costs are fairly distributed to those persons who choose to incur them. Such programs allow anyone to advocate environmental improvement and support it financially. Advertisement also develops public awareness of the natural resource that the product displays. When products and proceeds are directed to a specific local site, the cost/benefit link is close.

Limitations: Caution must be exercised to ensure that the administrative costs of voluntary sales and tours justify the typically small amount of revenue raised, even if such programs are implemented primarily to heighten public awareness. Proliferation of many voluntary programs should be avoided. Governments may also be criticized for competing with the private sector.

Reference for Further Information: Report from the Governor's Blue Ribbon Panel, *Financing Maryland's Tributary Strategies*, University of Maryland Sea Grant College, August 1995; Indiana Legislative Services Agency, *Issues Relating to the Indiana Heritage Trust*, 1997.

**DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY
CONSERVATION RESERVE PROGRAM**

Description: This program, managed by the Farm Service Agency of the U.S. Department of Agriculture (USDA), provides direct assistance payments to eligible applicants to place highly erodible or environmentally sensitive cropland into a 10-15 year contract, i.e., taking it out of crop production. The participant, in return for annual payments, implements a locally approved conservation plan for converting cropland to a less intensive use such as grasses, legumes, fobs, shrubs, or trees. Eligible applicants include any individual, private business, legal entity, State, political sub-division of a State, or any agency thereof owning or operating private, State, and local government croplands. The program seeks to protect the nation's long-term capability to produce food and fiber, reduce soil erosion and sedimentation, improve quality, create better habitat for fish and wildlife, provide needed income support to farmers, and curb surplus production of some commodities.

Actual Use: The Conservation Reserve Program obligated approximately \$1.7 billion in cash or generic commodity certificates in Fiscal Years 1996 and 1997, respectively. The assistance ranged from \$50 to \$50,000 and averaged more than \$4,315. The USDA forecasts that it will obligate another \$1.797 billion and \$1.694 billion in this type of assistance in Fiscal Years 1998 and 1999. In Fiscal Years 1986 through 1997, the program had signed contracts for 33.1 million acres. The average soil erosion reduction on land contracted in the program is 19 tons per acre per year.

Potential Use: This important federal program can be used to help idle cropland and reduce nonpoint source pollution in watersheds throughout the country.

Advantages: The program provides an incentive to cropland owners to convert overused acreage to a less intensive use and adopt approved conservation plans. The less intensive use helps reduce erosion, as well as accompanying nonpoint source runoff and pollution. The program is leveraged in that it will pay up to fifty percent of the cost of implementing approved conservation practices.

Limitations: The cropland must be owned or operated for at least three years prior to the close of the sign up period. Competition for the program is so intense that some cropland owners with environmentally sensitive properties may not be able to enroll in the program before its annual appropriations are exhausted.

Reference for Further Information: U.S. Department of Agriculture, Farm Service Agency, 14th & Independence Avenues, SW, Washington, DC 20250. Telephone Number: 202-720-6221.

**DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
WETLANDS RESERVE PROGRAM**

Description: This program, managed by the Natural Resources Conservation Service of the U.S. Department of Agriculture (USDA), provides cash payments to eligible applicants to place farmed wetlands, prior converted wetlands, pasture and hayland riparian areas, and eligible buffer areas under permanent or long-term (30 years) easement or restoration agreements, i.e., taking it out of crop production. Eligible applicants include individual landowners, partnerships, associations, corporations, estates, trusts, other business enterprises, or other legal entities and when applicable, States, political subdivisions of States, or any agency thereof owning private croplands. The program seeks to restore and protect farmed wetlands, prior converted wetlands, riparian areas, and eligible buffer zones.

Actual Use: Lump sum payments are made for permanent easements while from five to thirty payments totally 75 percent of easements amounts are made for 30-year easements. The Wetlands Reserve Program obligated direct payments of approximately \$106.0 million in Fiscal Year 1997. The USDA further estimated obligations of about \$239.3 million and \$127.7 million in Fiscal Years 1998 and 1999, respectively. The Agency projected that its Fiscal Year 1998 funds would enroll an estimated 212,000 acres in the program nationwide.

Potential Use: This federal program can be used to preserve environmentally sensitive land and protect water quality by reducing nonpoint source pollution in watersheds throughout the country. The program's goal is to have 975,000 acres enrolled by 2002 with a third in permanent easements, a third in 30-year easements, and a third in restoration agreements.

Advantages: The program provides an incentive to cropland owners to take sensitive acreage out of production. The protection of wetlands helps absorb and reduce nonpoint source runoff and pollution. The program is multi-faceted in that easements can be long-term or permanent

Limitations: The cropland must be owned or operated for at least three years prior to the close of the sign up period. Competition for the program is so intense that some cropland owners with environmentally sensitive properties may not be able to enroll in the program before its annual appropriations are exhausted.

Reference for Further Information: U.S. Department of Agriculture, Natural Resources Conservation Service, Watersheds and Wetlands Division, P.O. Box 2890, Washington, DC 20013, Telephone: 202-690-0848.

ASSURANCES

Description: Private landowners negotiate agreements with the appropriate government(s) to fund specified conservation costs in exchange for “assurances” that their businesses will not be interrupted or seriously impacted due to environmental concerns. The private landowners agree to ensure that their business activities will not have a detrimental impact on specified plant and animal species living on their property for a specified period of time, usually at least twenty years.

Actual Use: The Fieldstone Habitat Conservation Plan program in southern California spent \$13 million dollars to secure compliance for Endangered Species Act (ESA) regulations on 63 species for 30 years. Fieldstone had calculated that it would cost much more than that amount to attempt to save some or all of the 63 species at a later date.

Potential Use: Assurances could be used wherever landowners and corporations own and/or operate businesses on economically-valuable property on, adjacent to, or near environmentally valuable habitat. The landowners and businesses would agree to fund the conservation so that they can ensure the profitable use the property without danger, or with reduced danger, of future ESA legal entanglements.

Advantages: Assurance programs harness the calculated economic profit motivations of the private sector to achieve conservation and beneficial use of property. The environmental community gets substantial environmental investment from the private party and a concrete, legally enforceable contract to protect species and habitat.

Limitations: Assurances are expensive and many landowners and businesses may not be able to afford the investment. Some private parties may feel that the practice approaches or represents heavy-handed, environmental arm twisting. The assurances only protect the specific species listed in the contract agreement.

Reference for Further Information: *The Keystone National Policy Dialogue on Ecosystem Management*, October 1996. The Keystone Center, P.O. Box 8606, Keystone, Colorado 80435-7998. Telephone Number: 970-468-5822.

CAPITAL IMPROVEMENTS PROGRAM

Description: A Capital Improvements Program (CIP) is a planning and financial management process used by public sector agencies for identifying, prioritizing and scheduling planned capital improvements, usually over a 5-6 year period. CIP's are usually updated and revised on an annual or semi-annual basis.

At their most basic, they involve an internal and public review process which results in a prioritized listing and schedule for future capital investments. More sophisticated CIP's will also contain a financing element which may consider sources of financing, impacts of facilities on operating costs, and effect on tax rates, debt loads and borrowing limitations. Some CIP's are tied more explicitly to the development approval process through concurrency requirements which provide that adequate facilities must be in place, or scheduled in the CIP, in order for zoning or development proposals to be approved.

Actual Use: Used by most medium and large governmental units and public service providers throughout the nation to plan their capital investments, environmental and otherwise. In Florida and Maryland, for example, concurrency requirements are tied to CIPs.

Potential Use: All general and special purpose governmental units and service providers could benefit from implementing a formal CIP process, either basic or sophisticated, to implement long-term, community-based environmental investments. Those governments which have a basic CIP could consider expanding it to include a financing element and/or concurrency requirements.

Advantages: Because of the public hearing process, a CIP makes the community infrastructure investment process more open to the public and stakeholders. It also enables general and special purpose governmental units and service providers to consider capital needs on a cumulative or multi-year basis. A CIP can lead to more efficient and effective use of a community's limited capital resources as it provides a framework for continuity and policy commitment.

Limitations: A CIP requires an investment of time and commitment of an organization to develop, approve and implement. It requires expertise that a small and/or disadvantaged community may not have. When tied to concurrency requirements, CIPs can have the effect of "privatizing" the community investment and construction process by allowing developers and property owners to determine when and where facilities are to be constructed.

Reference for Further Information: International City/County Management Association, 777 North Capitol Street, NE, Washington 20002. Internet: www.icma.org, Government Finance Officers Association, 180 North Michigan Avenue, Suite 800, Chicago, Illinois 60601. Internet: www.gfoa.org.

COMMUNITY FOUNDATIONS

Description: A community foundation is a federally tax-exempt non-profit organization that makes grants for charitable purposes in a specific community or region. The funds available to a community foundation are usually derived from many donors and held in an endowment that is independently administered. Income earned by the endowment is used to make discretionary grants meant to build, strengthen and improve the community. Although a community foundation may be classified by the Internal Revenue Service as a private foundation under Section 501(c)(3) of the tax code, most are classified as public charities and are thus eligible for maximum tax-deductible contributions from the general public under Section 170 of the code.

Community associations' basic appeal to donors is their flexibility. A donor can use a variety of tax-effective ways of giving charitable gifts and can choose how these donations will be used. The flexibility allows many individuals, through gifts and bequests, to establish permanent endowment funds within one foundation. A donor can create a permanent legacy with a cash contribution, gift of securities or real estate, assignment of ownership of a life insurance policy, creation of a charitable remainder trust, a bequest, or even transfer of an existing private foundation.

Actual Use: In 1995, community foundations in the U.S. had more than \$12.4 billion in assets and made \$806 million in grants. Community foundations are located in every major metropolitan area and state. While the number remains limited, they are a growing source of program-related investments (see **Section 10.B., Foundations: Program-Related Investments**).

Potential Use: Community foundations are excellent vehicles for support of community-based pollution prevention and similar environmental enhancement efforts. Community foundations are increasingly using program-related investments as an adjunct to their grantmaking in support of their purposes.

Advantages: Federally tax-exempt foundations that offer tax deductibility of donations can appeal to profitable businesses and high-income individuals able to donate substantial amounts with the benefit from a consequent reduction in income tax liability.

Limitations: Success in fund raising is essential for community foundations and they tend to make relatively small grants, reflecting the size of the endowments they manage.

Reference for Further Information: Contact Foundation Center, 79 Fifth Avenue, New York, NY 10003-3076, Phone: 212-620-4230, Fax: 212-691-1828, E-mail: mfn@fdncenter.org, Internet: www.fdncenter.org/.

CONSERVATION EASEMENTS

Description: Conservation easements are deed restrictions or covenants that prohibit, limit, or permit certain activities on privately-owned land in perpetuity. The easements do not restrict ownership or sale of the parcel, although purchasing an easement constitutes partial ownership in some sense. Not only do easements prohibit or limit the density of development, but also may require additional landowner work, e.g., soil conservation and weed control, or monitoring particular types of plants, animals and habitat (see also **Section 7., Development Rights Purchases**).

Actual Use: These purchases are made by both public and nonprofit organizations, and easement activity has increased greatly in recent years. In Vermont, where easements have a long history, public funds had protected over 62,000 acres by 1997, four times the amount reported a few years ago. Florida, New Jersey, Iowa and Colorado also report recent increases, and States such as Texas and Montana have now started easement funding. The Nature Conservancy's cumulative easement activity quadrupled between 1986 and 1996. Governments are becoming more sophisticated in funding easements, now often financed via bonds, taxes, and trust funds. The new DWSRF program lets SRFs purchase easements to protect drinking water quality, if the land is integral to the project. The Ohio CWSRF loaned easement money to The Nature Conservancy, which will repay it via voluntary contributions. The mixing of public, nonprofit and private funds for easements is growing.

Potential Use: Besides watersheds, wetlands, farmlands and habitats, easements could be used to guide land use on urban brownfields, e.g., to adjust future exposure risks by tying clean-up standards to future use. They could be used to limit or direct development in a more protective and sustainable way. A wider range of required improvements could be added to easements, e.g., restoring habitats.

Advantages: Acquiring conservation easements is much cheaper than fee-simple purchases. Land maintenance costs are reduced, as these are paid by private landowners. The tax base is less severely diminished as property stays in private hands. The private landowner gains federal tax benefits if the easement is permanent. Environmental awareness and citizen involvement are heightened.

Limitations: Laws in each State vary as to the use and tax implications of private land donations to easements. While some States and localities offer income tax and property tax credits or deductions, other States pay the landowner directly or make in-lieu payments to localities. Legal and oversight activities may be very costly, and the possibility exists for easements to be violated.

Reference for Further Information: The Trust for Public Land (TPL), *GreenSense: Financing Parks and Conservation*, Phyllis Myers, ed., State Resource Strategies, Washington, D.C., Spr. 1997, E-mail: greensense@igc.org.; TPL, *Protecting the Source: How Land Conservation Safeguards Drinking Water*, by Richard Stapleton, San Francisco, 1997 and *Doing Deals: A Guide to Buying Land for Conservation*, 1995; Samuel Stokes, A. Elizabeth Watson, and Shelley Mastran, *Saving American's Countryside: A Guide to Rural Conservation*, John Hopkins Press, Baltimore, 1997.

CONSERVATION PARTNERSHIPS

Description: Conservation partnerships are partnerships between conservation organizations, federal and State agencies, and private industry. Through conservation partnerships, industrial and commercial activity is permitted on or near ecologically valuable land without threatening the natural resources on that land. Working together, the non-profit groups, the public agencies and industry determine what industrial and/or commercial activities might be compatible with the ecologically valuable land.

Actual Use: Conservation partnerships can be used to resolve conflicts over land use, while protecting ecosystems. For example, The Nature Conservancy makes extensive use of conservation partnerships in working with the private sector to protect valuable ecosystems. In one California preserve, oil drilling, sand-mining, and agriculture coexist with a protected natural area. The private partners accepted necessary limitations and restrictions on these activities, such as Best Management Practices (BMPs) that prevent or reduce pollution, and the use of advanced pollution control and monitoring technology.

Potential Use: These partnerships could be used to broker arrangements for use of federal land that is currently protected. They could also be structured to protect special habitats such as redwood or old-growth forests, sand dune beaches, and coral reef systems.

Advantages: Conservation partnerships can actually enhance private sector land values because of the proximity of environmentally-protected land. In addition, unlike traditional nature preserves, conservation partnerships maintain important tax bases for local governments.

Limitations: Partnerships may not be feasible in all cases. For example, some industrial or commercial activities may have pollution impacts that are not sufficiently controllable through BMPs or pollution control technology, and thus may be unsuited to use near ecologically valuable areas. Some locations and industries may require technological approaches that make the partnership economically unworkable for the private partner.

Reference for Further Information: The Nature Conservancy, *Last Great Places: The Conservancy's Protection Initiative for the 1990s*, Arlington, VA, May, 1991.

CONTRIBUTIONS OF LAND

Description: Direct contributions of environmentally-sensitive land from individuals and businesses can reduce the need for outright governmental expense, or the land can be sold to raise revenue for other environmental projects. Land donated through conservation easements and the USDA conservation reserve program are discussed elsewhere in this section. A closely related tool is discussed in **Section 7., Development Rights Purchases**).

Actual Use: Many non-profit land trusts which receive direct land donations from individuals and corporations exist on a national, State and local basis. For example, The Nature Conservancy regularly receives donations in land, which it then manages for environmental purposes or, if not environmentally sensitive, sells for other natural lands acquisition. Groups such as these often work in tandem with local non-profit land trusts. Corporate land donations have been increasing in recent years, as large businesses seek to avoid the costs of environmental management or enhance their image. State wetlands mitigation programs, whereby developers altering exiting wetlands must create a wetland elsewhere, are a form of contribution in land sometimes required by regulation. Contributions of land may be offered in lieu of monetary fines.

Advantages: Voluntary contributions of land are a potentially large revenue source, or form of governmental cost-savings, and a valuable form of non-regulatory environmental protection. Potential cost-savings from pollution prevention in the first place, as opposed to cleaning up sites after the fact, could be notable, even if there is an initial governmental monetary outlay such as under the federal agricultural reserve program. The environmental incentives in term of enhancing public awareness of environmental needs are clear-cut, and the opportunity exists to attract additional public or private resources to manage lands set aside for protection is strong.

Limitations: As with all in-kind voluntary programs, revenue is unpredictable or non-existent. Administrative costs for future oversight may be high. Donations may be made to get rid of neglected land, which then must be managed or sold, by governments or non-profit organizations. Thus, these programs must be evaluated on a case-by-case basis.

Reference for Further Information: The Conservation Foundation, *Annual Report: 1995*, Washington, D.C.; The Nature Conservancy, *1995 Annual Report*, Arlington, VA.

COST-SHARE FOR LIVESTOCK WASTE STORAGE SYSTEMS

Description: Under this program, farm owners enroll or are accepted in a State or other government-sponsored livestock waste storage program (usually for hogs, chicken, cattle, and/or horses). The farmers then invest their own money in some form of approved best-management practices for ensuring proper livestock waste storage systems. The program participants receive a matching cost-share payment up to a specified limit from the State or other government sponsoring the program.

Actual Use: A number of States have this type of subsidy program for livestock waste-storage control. For example, Maryland's Agricultural Cost-Share Law authorizes cost-share payments for livestock waste storage systems up to a maximum of \$35,000 per system. The Maryland program's cost-share payments currently cover 30 percent to 60 percent of the cost of the typical farm waste storage system.

Potential Use: This kind of community-based program could provide valuable assistance to pollution control efforts in any watershed. The program would encourage farmers to adopt the best currently available management practices for their livestock herds.

Advantages: The program is leveraged in that it elicits a matching share from the private sector. The assistance provided to farmers in this type of State or local program could be combined with that provided in other federal programs to leverage even more moneys and to fund larger projects (for example, see **Section 7., Conservation Reserve Program**).

Limitations: The incentives provided by typical livestock waste control programs may be too low to attract all or most farmers to participate in the programs. Some smaller and/or needy farmers may not be able to afford to share any amount of the share.

Reference for Further Information: *Financing Alternatives for Maryland's Tributary Strategies*, A Report From the Governor's Blue Ribbon Panel, 1994. Copies are available from the University of Maryland Environmental Finance Center, Coastal and Environmental Policy Program, 0112 Skinner Hall, College Park, Maryland 20742. Telephone Number: 301-405-6384. Fax Number: 301-314-9581. World Wide Web site - <http://www.mdsg.umd.edu/MDSG/EFC/index.html>

DEDICATED GOVERNMENT TRUST FUNDS

Description: A government trust fund is a special account set up to receive and disburse revenues for a specific program/activity. States and localities earmark revenue to trust funds either constitutionally or by legislation. The most commonly used include earmarked portions of taxes and fees, referendum bond act dollars, environmental fines and penalties, lotteries, budget surpluses, and even private donations. Some federal grants are targeted to trust funds. Most constitutionally earmarked funds need no legislative appropriation to release fund deposits. Deposits accrue automatically and usually are available only for the purpose named in the constitution, hence their dedication. In other cases, the legislature pledges revenues from a funding source(s), and creates a trust fund to manage them. Legislative appropriations may or may not be required to release statutorily dedicated funds.

Actual Use: All States have dedicated environmental trust funds, some very large (over \$100 million), and local trust funds are growing rapidly in popularity. Fund revenue sources, uses and financing techniques are getting more innovative. State and local funds typically make loans as well as grants, require public or private matching dollars, and fund public and nonprofit sector projects. Common dedicated uses are open space acquisition and easements, parks and recreation, habitat restoration, green ways, trails and historic sites, and pollution control facilities. Examples include New Jersey's Green Acre Program funded by multiple bond acts and real estate transfer taxes, which gives 25% grants and low-interest loans to local trust funds with voter-approved "open space" property assessments. Minnesota's Environmental Trust and Colorado's Great Outdoors Funds are funded in part by lottery revenues, Missouri's Soil and Water Fund by sales tax set-asides, Florida's Everglades Fund and Maryland's Program Open Space by environmental fees, and North Carolina's Clean Water Fund by a 6.5% budget surplus earmark. Washington's Public Works Trust Fund uses the cigarette tax. Federal ones include the Inland Waterways, Highway, and Superfund Trust Funds.

Potential Use: The potential uses of dedicated trust funds are large and growing, and capable of funding any environmental project or program.

Advantages: Trust funds help ensure that revenues are used for intended purposes, but fund managers may have flexibility in what projects to finance. Some revenue sources, e.g., specific taxes, are even more predictable than legislative appropriations. Revolving funds and matching requirements are highly leveraged, and investment earnings add to revenues. Particularly local trust funds have a high cost/benefit relationship, are popular, and have voter approved funding sources.

Limitations: There is some administrative burden to set up and maintain trust funds. Temporarily idle resources may be targets of budgetary raids and, historically, not all earmarks have been assured.

Reference of Further Information: The Trust for Public Lands, various publications including *GreenSense: Financing Parks and Conservation*, Phyllis Myers, editor, States Resource Strategies, 1616 P. St. NW, Washington, D.C. (email: greensense@igc.org)

ECOTOURISM

Description: Ecotourism is the use of recreational revenues (often generated by non-indigenous peoples) to fund conservation activities in natural areas which are visited. The Ecotourism Society expands this concept by defining ecotourism as “purposeful travel to natural areas to understand the culture and natural history of the environment, taking care not to alter the integrity of the ecosystem, while producing economic opportunities that make the conservation of natural resources beneficial to local people.”

Actual Use: A number of countries have used ecotourism to both finance environmental protection efforts and prevent additional environmental damage. For example, Australia established a National Ecotourism policy that mandates environmental impact review in areas that experience significant natural resource tourism.

Potential Use: Ecotourism could be further applied to many natural areas in additional countries worldwide. The rainforests in South America represent an excellent opportunity to further test and develop the ecotourism concept.

Advantages: If carefully targeted and properly implemented, ecotourism offers the real hope of protecting valuable ecosystems while producing a source of revenue for the local community. In Rwanda, for example, ecotourism has helped save mountain gorillas from extinction. Rwanda’s Volcano Park has become an international attraction and represents that third-world country’s largest source of foreign exchange.

Limitations: Ecotourism may be infeasible, or even harmful, in natural areas that are too fragile to support visitation. For example, along popular Himalayan tourist routes, litter has been strewn on trails and the alpine forest devastated by travelers looking for fuel to heat food and bath water. On the other hand, many natural areas may not attract a sufficient number of paying visitors to warrant ecotourism. Some countries may decide not to use the revenues generated by ecotourism to protect and support the natural areas visited.

Reference for Further Information: Apogee Research, Inc. draft report, *Environmentally-Sustainable Tourism in APEC Member Countries*, prepared for the Asian-Pacific Economic Council, March, 1995. World Wide Web site article titled, ” Can Ecotourism Save the Rainforests?”, located at http://www.ran.org/ran/info_center/ecotourism.html

EMISSIONS TRADING

Description: Emissions trading programs allow sources of air pollutants to trade pollutants in some fashion, either geographically, over time, or among other sources. Many emissions trading programs incorporate a "bubble" structure. A bubble program treats multiple emission sources as if they were included within an imaginary bubble, allowing existing sources to adjust emissions levels within the bubble as long as an aggregate limit on emissions is not exceeded. "Offset" programs allow new sources to obtain emissions credits from existing sources to offset new emissions. "Banking" programs allow sources to store emission reduction credits for future use or sale, while "netting" programs allow sources undergoing modification to avoid new source review if plant-wide emissions are reduced.

Actual Use: The EPA's air emissions trading program began in 1975 with a proposal to exempt emissions at new or modified existing sources from New Source Performance Standards as long as total emissions from the facility did not increase. Since that proposal, the EPA's air emissions trading program has included bubbles, offsets, banking, and netting elements. An emissions trading program is an integral part of the sulfur dioxide control plan outlined in the Clean Air Act Amendments of 1990. In California, the South Coast Air Quality Management District is setting up a Regional Clean Air Incentives Market (RECLAIM) that will allow around 2,000 sources of reactive organic gases, nitrogen oxides, and sulfur oxides to buy and sell emission reduction credits on an open market.

Potential Use: State and local air programs may be able to use emissions trading as a tool to meet the air quality standards outlined in the Clean Air Act Amendments of 1990.

Advantages: According to a GAO study, emissions trading can save up to 90 percent of private control costs. It encourages private research into air pollution control technologies, and lets the private sector allocate resources to produce emissions reductions in the most cost-effective manner.

Limitations: Emission trades may require extensive and time-consuming prior approval, and may be hindered by legal and regulatory requirements. Establishing emissions and air quality levels before and after trading is often difficult.

Reference for Further Information: American Petroleum Institute, *The Use of Economic Incentive Mechanisms in Environmental Management*, June, 1990. Provides a general discussion of all types of economic incentive programs, including a discussion of current and historical emissions trading programs.

ENVIRONMENTAL LOTTERIES

Description: Lotteries sell tickets for a chance to win a sum of money or other valuable prize. Where operated for the benefit of State or local government, they generally retain a portion of the revenue from ticket sales, ranging from 10 to 50 percent depending on the game, for a dedicated use. Lottery games can be designed to appeal to particular demographic groups, including those who support various types of environmental protection programs or ecological enhancement measures. State lotteries regularly change the appearance of their games as part of their marketing strategies. State legislatures could take this concept a step further by requiring changes in the purposes of lottery games to attract participants who might not otherwise play.

Actual Use: Lottery profits are contributing significantly (\$14 billion) to the revenues of 37 states. Portions of lottery revenue are earmarked for education, and profits from specific games are devoted to special agencies such as stadium authorities. Minnesota has had an environmental lottery for over ten years and voted in 1990 to require that not less than 40 percent of net proceeds go to the Environmental and Natural Resources Trust Fund. Colorado has a lottery-funded conservation program (GOCO). Maine's lottery dedicates most profits to the Outdoor Heritage Trust. Kansas also dedicates a small, fixed percentage of lottery proceeds to wetlands and nonpoint source control.

Potential Use: Earmarking of portions of general lottery profits for purposes such as K-12 education has been happening. Whether environmental purposes receive part of lottery profits depends on their political appeal in state legislatures.

Advantages: Lottery revenues can substitute for unpopular taxing or borrowing. There is a large, relatively stable revenue potential and lottery advertising can be used to heighten public awareness of environmental needs.

Limitations: Lotteries, off-track betting and other legalized gambling are controversial means for raising public sector revenues. Some critics raise equity issues regarding a shift in fiscal burden among socio-economic groups. Off-track betting and other gambling are criticized for attracting and promoting criminal activities. The bottom line is that legalized gambling has social costs, such as the high suicide rate among compulsive gamblers. The Governor of South Carolina is leading an effort to eliminate legalized video poker despite its \$61 million contribution to the state budget.

Reference for Further Information: Contact North American Association of State and Provincial Lotteries, 1700 East 13th Street, Suite 4-PE, Cleveland, OH 44114; Phone (216)241-2310; Fax (216)241-4350. See *States as Water Quality Financiers*, National Conference of State Legislatures, Denver, Colorado, May 1991.

ENVIRONMENTAL REVOLVING FUNDS

Description: Multi-media Environmental Revolving Funds are State run lending institutions generally modeled after the wastewater and drinking water revolving funds established under the Clean Water Act and the Safe Drinking Water Act with several important differences.

Actual Use: The notion of a single lending entity based on the revolving fund principle is not a new one at the State level. Several States, including Texas and Ohio, have long-established multi-media revolving funds making loans for a wide variety of environmental infrastructure needs. An example of an even broader entity is the Kentucky Infrastructure Authority which includes eligibility for environmental, transportation and other public purpose facilities.

Potential Use: Environmental SRFs hold great promise in their capacity to direct and apportion subsidies to multi-media eligibilities. In that sense, they allow States to plan and target limited resources to their highest priority needs. The environmental SRF concept represents an excellent vehicle for directing and apportioning funding to a wide variety of community-based, watershed protection and nonpoint source projects.

The States might establish these multi-media SRFs in tandem with the Environmental Protection Agency (EPA)-supported wastewater and drinking water programs operating them in a kind of corporate group structure. At the very least, the EPA-funded SRFs could co-finance water related projects with the multi-media purely State-funded entities.

Advantages: Comprehensive (multi-media) funding eligibilities make the environmental SRF concept extraordinarily well suited to meeting the goals of community-based environmental protection.

Limitations: Not all communities can afford loans, even at subsidized rates. The initial capitalization of a revolving loan fund is expensive and raising adequate money to capitalize the funds may not always be politically feasible.

Reference for Further Information: Council of Infrastructure Financing Authorities, 1625 K Street, NW, Suite 200, Washington DC 20006. Telephone Number: 202-371-9694. Facsimile Number: 202-371-6601. USEPA, Office of the Comptroller, Environmental Finance Program, 401 M Street, SW, Washington, DC 20460. Mail Code: 2731R. Contact: George Ames at ames.george@epa.gov

GREEN CREDIT CARD

Description: A private company or a nonprofit environmental organization works with a bank or other financial institution to issue a major credit card on a State, regional, or even national basis. The card is structured to benefit an existing or new fund in an organization dedicated to watershed protection, habitat management, species protection, or other environmental goals. For each “green card” issued by the sponsors, a fixed amount per card and a small percentage of the spending would be donated to the fund in the card user’s name. The fund would then be drawn upon by the host environmental organization to finance individual environmental projects and activities.

Actual Use: Many State, regional, and national credit cards are issued by banks and affiliated organizations such as major automobile manufacturing companies for special purposes or “affinities.” In the environmental arena, the National Wildlife Federation and the Sierra Club have explored and/or developed green credit cards directed at existing and potential members. The Chesapeake Bay Foundation has issued a regionally-based green credit card to help finance projects and activities in the Bay watershed.

Potential Use: Like the Chesapeake Bay Foundation example, special watershed groups located in other parts of the country could issue regional green credit cards. The Puget Sound (Seattle market) area, the Great Lakes (Milwaukee, Chicago, Detroit, Toledo, Cleveland markets), and the Gulf of Mexico (Houston, New Orleans, Mobile, Tampa-St. Petersburg markets) are possible examples of prime areas for this approach, if they have not already implemented it.

Advantages: This type of program allows people to become involved in their community by focusing on an ecosystem/place that they already value. Furthermore, it accomplishes this purpose while simultaneously raising money for worthwhile environmental projects that benefit the local community or ecosystem in which they live or visit.

Limitations: Start up and marketing campaign cost may be high. There has been a proliferation of special “affinity” cards in recent years and the competition for each card user’s account is intense. The revenues raised would be moderate at first and probably suited to project rather than major system funding.

Reference for Further Information: See *Financing Alternatives for Maryland’s Tributary Strategies*, A Report From the Governor’s Blue Ribbon Panel, 1994. Copies are available from the University of Maryland Environmental Finance Center, Coastal and Environmental Policy Program, 0112 Skinner Hall, College Park, Maryland 20742. Telephone Number: 301-405-6384. Facsimile Number: 301-314-9581. Web site - <http://www.mdsg.umd.edu/MDSG/EFC/index.html>.

INDIVIDUAL AND CORPORATE DONATIONS

Description: Donations are the voluntary giving of money. Most frequently, donations are made to non-profit foundations or trusts, or company-sponsored organizations or trusts, or company-sponsored foundations. Frequently, private sector corporations and/or foundations match individual donations. Donations to governments are made through line item check-offs on income tax returns or to government trust funds.

Actual Use: At least seven States, including Arkansas, Ohio, North Carolina, Virginia and Wisconsin, now use a check-off box on the State income tax return to allow taxpayers to earmark a portion of tax refunds for non-game wildlife programs and natural areas such as wetlands. The federal government also experimented with this form of fund-raising for a time. However, compared to government efforts, donations to non profit organizations are huge, measuring in the hundreds of millions annually. Many non profit organization operating budgets come largely from individual, as opposed to corporate, donations.

Potential Use: The use of voluntary programs has grown steadily, and has become increasingly innovative to attract more potential donors. Voluntary programs are best suited to finance environmental programs that attract significant public interest and are highly visible, such as an estuary, urban lake, or wetland. The use of income tax check-off donations has grown in popularity as a State funding mechanism, and could be used locally as well. Corporate and individual giving may also take the form of in-kind payments or special services.

Advantages: There is little public opposition to voluntary donations, and the advantage of enhancing public interest through a well-publicized campaign and equitable financing means can be extremely important. Although government revenue collection may be limited, money can provide valuable supplemental funding for specific cleanup programs. The ability to leverage additional financial resources, e.g., through corporate matching contributions and in-kind services, is high.

Limitations: Donations tend to fluctuate with the economy, and also to some extent depending on current tax code restrictions on philanthropic activity. Thus, the revenue stream may be unpredictable and unreliable for financing some necessary program costs. Administrative costs may be high, and it may be difficult to track the use of funds which may be demanded by donors.

Reference for Further Information: Environmental Data Resources, Inc., *Environmental Grant Making Foundations: 1995 Directory*, Rochester, New York, 1996 (Email: edri@eznet.net); The Foundation Center, *National Directory of Corporate Giving*, New York, 1995 (212-620-4320).

LAND TRUSTS AND RECLAMATION BANKS

Description: Land trusts acquire and manage natural lands and resources on behalf of State or local governments. They are fund/ed by a variety of sources similar to dedicated government trust funds, especially land-related sources like real estate transfer and property taxes. Nonprofit land trusts are supported by government monies and private donations. Revenues from timber-cutting, farming, recreation, and other land uses may be rededicated to trusts. Land bought for mitigation purposes often are put in trusts. Land reclamation banks are publicly or privately funded institutions that buy contaminated sites, remediate them, and sell or lease them to raise income for further remediation.

Actual Use: All States and a growing number of localities have land trusts. A recent survey of 22 States describes how they manage some 135 million acres of trust land, in forests, farmland, and parks. State trusts are funded by a combination of State (sometimes multi-State) and local revenues, federal and private foundation support including matching grants, and corporate donations. Land acquisition often is brokered by nonprofit groups such as The Trust for Public Land, American Farmland Trust, Nature Conservancy, and local counterparts. A recent example is the Sterling Forest 16,000 acre acquisition in New York and New Jersey. Land management also is often a joint endeavor, lasting in perpetuity. A local example is Nantucket Island, which set up a trust in 1983 to buy up to 15% of its shores and moors by 1990, financed in part by a 2% real estate transfer tax on all property sold. The trust manages the resources for long-term protection and recreation, using volunteers. Several cities have used land reclamation banks to clean up and redevelop brownfields.

Potential Uses: State, localities and the nonprofit sector could use land trusts as mechanisms to encourage protection of any natural land and unique habitats, including watersheds.

Advantages: Land trusts combine financing, management and planning functions in a single entity. They are highly leveraged linking public and private of funding, and are one of the most innovative approaches today. Cost/benefit linkage is high, as contributors know what land is protected. The concept helps to protect land use revenues, such as from timber. Land reclamation banks allow the public or nonprofit sector to take liability risks that private businesses may be unwilling to assume.

Limitations: Staffing land trusts and managing land assets over time can be very costly, trust administrators must have adequate resources for land management activity, which may be up to one-third of acquisition costs. Use of volunteers reduces needs somewhat. Land management also may result in considerable controversy, for example, over timber cutting, burning or recreational access. If proceeds from the lease or sale of remediated property are insufficient to cover remediation cost, investment of public funds may be required. Localities will suffer a loss of tax revenues.

Reference for Further Information: Souder, Jon A. and Fairfax, Sally K., *State Trust Lands: History, Management and Sustainable Use*, University Press of Kansas, 1996; The Trust for Public Land, *Land and People*, Vol. 10, No.1. San Francisco, Spring 1998.

MINI BONDS FOR STREAM RESTORATION

Description: Small denomination bonds sold directly to the general public to finance capital projects, such as tree planting, that promote stream restoration. First proposed by the Maryland Governor's Blue Ribbon Panel that prepared *Financing Alternatives for Maryland's Tributaries Strategies*. Please see also the closely related tool in **Section 2.A., Mini Bonds**.

Actual Use: None known by the authors as of this date specifically for stream restoration purposes, although small denominational general revenue bonds (e.g., \$500.00 at par) have been sold by a number of governments.

Potential Use: Very promising, because it would provide the general public a tangible and politically popular personal opportunity to invest in general and/or specific environmental activities and improvements

Advantages: Use of this innovative financing tool broadens the base of public support for stream restoration by directly connecting individual investments with environmental improvement(s).

Limitations: Administrative costs may be high due to the large number of bond holders.

Reference for Further Information: See *Financing Alternatives for Maryland's Tributaries Strategies*. Report from the Governor's Blue Ribbon Panel (1993). See cross reference with the writeup in **Section 2.A., Mini Bonds**.

MITIGATION LANDS AND BANKING

Description: Mitigation land is a publicly-owned and managed natural site that has been purchased or protected with public or private funds, in the form of direct payments, voluntary land donations and/or required mitigation credits to permittees for set fees, which may be banked. Mitigation banking was begun to meet wetlands mitigation requirements for development impact. Mitigation occurs off-site, but usually in the same area. Wetlands mitigation fees are based on impaired acreage or wetlands value, and sometimes, credits may be sold to other permit applicants. The mitigation idea is used by governments to acquire any valuable natural area, perhaps unrelated to the impacted area, to compensate for negative construction consequences. Here, the mitigation bank is the special account to support the property. Public agencies may require mitigation from other public agencies.

Actual Use: Wetlands mitigation banking fulfills mitigation requirements under federal and State regulations when on-site solutions are not possible. Mitigation is often required by CWA Section 404 wetlands permits (and by State programs such as Oregon's Removal-Fill Permit Program) to compensate for adverse removal or fill activities. It is used widely by States and localities to protect a variety of natural areas such as farmlands, forests, ranches and watersheds. Public agencies such as those in California and Florida are growing more innovative in designing mitigation packages. Escondido, California bought a 3,000 acre ranch as an off-site mitigation bank, with sales of credits for approved projects funding acquisition and management. Florida acquired a 3,636 acre ranch and a 6,700 acre property to build the Suncoast Parkway with public funds and toll revenues (brokered by the Trust for Public Lands). In South Carolina, 17,000 acres of sensitive watershed was bought as highway mitigation, with The Nature Conservancy managing the \$12 million bank. Corporations such as Disney and paper/pulp companies make voluntary mitigation donations to green their image.

Potential Use: States and localities may operate multiple mitigation banks, with the bank serving as the account for a particular parcel of mitigation land. The concept could be extended to brownfields, with publicly-owned sites generating credits for private developers to use in other areas.

Advantages: Requiring compensatory mitigation is consistent with, and advertises, the goal of protecting natural areas including wetlands. Mitigation banking offers a potentially more efficient and beneficial approach than conventional case-by-case, off-site mitigation, by providing larger mitigation parcels, partnerships between government and conservation groups, attention to ongoing management, and interagency cooperation. Mitigation may reduce costly development delays.

Limitations: Ongoing management of mitigation lands is costly, and must be factored into revenue projections. Some mitigation packages are still too small for ecological protection.

Reference for Further Information: The Trust for Public Lands, *GreenSense: Financing Parks and Conservation*, Phyllis Myers, editor, Fall 1996 and Spring 1997, San Francisco, CA; USEPA, Wetlands Hotline, 1-800-832-7828.

MUNICIPAL UTILITY ASSET SALES

Description: Local governments and special authorities use these sales to tap the large capital potential locked up in the valuable municipal facility assets that they already own. These public entities then use the revenues generated to fund community-based watershed management activities, particularly nonpoint source pollution projects. Under this approach, the municipal utility would sell the capital asset(s) such as water mains, pumping stations, and storage tanks to private investors interested in reducing their tax burdens.

Actual Use: The editors are aware of no public municipal utility examples at this time. Any such examples of this funding tool provided by *Guidebook* users would be welcomed. Private utilities including telephone and electric companies have traditionally depreciated their facility assets such as telephone and electric power transmission lines and generating stations over an established period of their useful lives (usually 30 years or more).

Potential Use: The environmental municipal utility asset could be sold to large profitable companies and other wealthy investors who would use the asset's depreciation schedule to reduce their tax liabilities over a number of years. The use and maintenance of the capital asset would remain with the municipal utility and ownership could revert to the utility at the end of the asset's depreciated life.

Advantages: New source of private investment that can be used to fund public environmental projects and activities would be generated. The mechanism taps into, and leverages, the previously unrealized value of already existing, major public capital assets.

Limitations: This new investment strategy would probably require legislative approval at some level of government. If approved, it could result in a net loss of tax revenues to federal and State treasuries over time. Any program would need to be financed, developed, and marketed to potential private investors.

Reference for Further Information: USEPA document, *Identifying, Planning, and Financing Beneficial Use Projects Using Dredged Materials: Beneficial Use Manual*, 1996. USEPA, Office of Water, Oceans and Coastal Protection Division, 401 M Street, SW, Washington, DC 20460 (mail code: 4504F). Telephone Number: 202-260-1962. Fax Number: 202-260-8742.

NON-PROFIT ORGANIZATION

Description: Non-profits, such as foundations and trusts, are defined as non-governmental organizations (NGOs) that accrue no profit to individual members, but spend resources pursuing specific goals. NGOs can be formed for many purposes, including natural lands acquisition, land management, environmental monitoring compliance, research, education, (discussed separately) and other activities. They include independent private foundations, 501 C (3) community foundations, (discussed separately) operating foundations which make grants to pre-selected organizations, and public foundations funded by government (see also **Section 7., Foundations: Program-Related**).

Actual Use: Environmental non-profit organizations are a fast growing and important mechanism in terms of cooperative activity with all levels of government. An NGO such as the Chesapeake Bay Foundation can mix public and private donations to support governmental goals. Organizations such as The Nature Conservancy, Ducks Unlimited, and The Trust for Public Lands may acquire and manage valuable natural lands in lieu of government, or until governments can afford to purchase them. Others raise funds for air pollution, recycling, and contaminated sites. Many States fund nonprofits, e.g., since 1987, New Jersey voters have approved \$45 million for nonprofit projects.

Potential Use: The potential use of NGOs to pursue quasi-governmental environmental activities in lieu of governments, or on their behalf, is growing. NGOs constitute a logical place for governmental outsourcing for technical, resource management, training and other work. While NGOs cannot perform any legal functions pertaining to environmental enforcement or represent governmental policy, they can perform innumerable activities on highly cost-effective basis.

Advantages: Nonprofits can leverage more monetary donations, volunteer manpower, resources and in-kind services, than can public agencies. This is due to their tax-exempt status, but also because they provide a safe and seemingly unbiased focal point that draws attention to the resources protected and environmental issues addressed. Many governments match private donations. NGOs may perform tasks more quickly and efficiently than government, since they are less bureaucratic, can effectively cross jurisdictions for greater ecosystem protection, and can act as “honest brokers”.

Limitations: Revenue generation may be quite unpredictable. Since nonprofits are controlled by their individual membership and boards, they may evolve over time and cannot always be held accountable by government, potentially undercutting the cost/benefit relationship. Some nonprofits are criticized for using too large a portion of donations for internal, administrative purposes.

Reference for Further Information: USEPA, *The Use of Nonprofit Organizations to Support Comprehensive Conservation and Management Plans*, Office of Water, Washington, DC, 1993; The Nature Conservancy, *Ecosystem Initiative Strategy*, Arlington, VA, 1993; Water Environment Federation, *Water Quality 2000 Project, A National Water Agenda for the 21st Century*, Alexandria, VA, November 1992.

POINT SOURCE/NONPOINT SOURCE TRADING

Description: Although it can take many different forms, point source/nonpoint source trading in principle involves point sources financing reductions in nonpoint source pollution in lieu of undertaking more expensive point source pollution reduction.

Actual Use: In North Carolina's Tar-Pamlico watershed, the Tar-Pamlico Basin Association (a coalition of point source dischargers) and State and regional environmental groups proposed a two-phased nutrient management strategy that incorporates point source/nonpoint source trading. The plan obligates Association members to finance nonpoint source reduction activities in the Basin if their nutrient discharges exceed a base allowance.

Potential Use: Several conditions appear necessary if a point source/nonpoint source trading program is to achieve ambient water quality objectives. The water body must be identifiable as a watershed or segment. There must be a combination of point sources and controllable nonpoint sources each contributing a significant portion of the total pollutant load, and accurate and significant data to establish targets and measure reductions. There must be significant load reductions for which the marginal cost (cost per pound reduced) for nonpoint source controls are lower than for upgrading point source controls. Finally, point sources must be facing requirements to either upgrade facility treatment capabilities or trade for nonpoint source reductions in order to meet water quality goals.

Advantages: Point source/nonpoint source trading programs increase the potential for cost-effective reduction in pollutant loading, since nonpoint source reductions funded by trading are typically achieved at lower cost per unit of pollutant than point source reductions. Under ideal conditions, a trading program should produce both cost savings to point source dischargers and improved water quality. Including both point and nonpoint sources in a single management strategy tends to force the development of a watershed-wide or basin-wide approach to pollution reduction.

Limitations: Implementing trading programs may require cooperation and information sharing between agencies without previous cooperative experiences (e.g., regulatory agencies with water quality authority and farmer assistance programs.) Technical limitations between point source and nonpoint source controls can make it difficult to arrive at an appropriate trading ratio. Administrative costs are also incurred for review and approval of individual trades.

Reference for Further Information: Office of Water, Office of Policy, Planning and Analysis, USEPA, *Incentive Analysis for Clean Water Act Reauthorization: Point Source/Nonpoint Source Trading for Nutrient Discharge Reductions*, April, 1992. Provides an analysis of trading programs, including case studies of trading programs in North Carolina and Colorado.

SPECIAL DISTRICTS **(Special Purpose Districts, Regional Authorities)**

Description: A special district is an independent government entity formed to provide and finance governmental services for a specific geographic area. Residents of special districts pay taxes to finance the improvements that they will benefit from. For example, a sewage special district might tax residents to finance extension of wastewater treatment services.

Actual Use: Primarily at the local level. Examples include:

- c Sewer Districts;
- c Water Districts;
- c Stormwater Management Districts;
- c Regional Solid Waste Authorities;
- c Water Resource Authorities;
- c Regional Port Authorities; and
- c Regional Air Quality Management Districts.

Special districts target costs and benefits of services to a particular population. For example, a drinking water district might be formed to finance extending municipal drinking water services to a newly-developed area. Special districts may issue revenue bonds in a number of States. Local governments use special districts to finance capital facilities independently, relieving the burden on general debt capacity. For example, a regional port authorities issue revenue bonds to finance port construction and/or renovation. Consortiums of local governments form special districts to address common problems. Examples include regional air quality and solid waste management authorities.

Potential Use: Special districts could be formed from nonattainment areas classified by the Clean Air Act Amendments, so that special taxes in these areas could finance air quality control programs.

Advantages: Costs are borne only by taxpayers who will benefit from improvements. Regional special districts can provide more specialized services than smaller governments (e.g., a regional solid waste authority may be more able to finance a solid waste facility than any one county.) Special districts can issue bonds, which reduces debt load on the general purpose government.

Limitations: Special districts are not directly accountable to the electorate -- most special district officials are appointed, not elected. May require special legislation in some areas.

Reference for Further Information: Porter, Douglas R., Lin, Ben C., Peiser, Richard B. *Special Districts: A Useful Technique for Financing Infrastructure*, Washington, D.C., Urban Land Institute.

TAX INCREMENT FINANCING - CBEP

Description: Tax increment financing (TIF) provides for the temporary allocation of the increased tax proceeds in a carefully designated area generated by increases in assessed property values. TIF uses the increased tax revenues stimulated by redevelopment to pay for the capital improvements required to induce the development. In a basic TIF, property assessments are frozen at a pre-development level in the specified area. Bonds are then issued to finance a portion of the redevelopment. As property values and assessments in the area increase, the municipality uses the added increment in tax revenues to meet the debt service on those bonds. The technique requires the creation of a special district and the maintaining of two separate sets of tax records.

Actual Use: Tax increment financing has been used for many years by local governments across the country for a wide variety of economic development projects. It is a particularly effective financing tool for projects that provide measurable specific benefits to select, well defined groups of taxpayers. More than thirty States nationwide have TIF laws on the books at the present time.

Potential Use: Tax increment financing could be used to help direct development away from sensitive environmental areas and to guide community-based development in economically and environmentally sustainable ways. It could also be used to help finance brownfields cleanup and redevelopment (see the closely related tool writeup in **Section 9., Tax Increment Financing**).

Advantages: Tax increment financing makes development self-financed. TIF is very flexible. Local control is retained and in most cases no local government debt limitation applies. With TIF, the development risks are shifted from taxpayers to the bondholders. The revenue potential and generation is very clear and very specific.

Limitations: TIF bonds pose a greater risk to investors and, thus, bear higher interest rates than general obligation bonds. TIFs are complex. Financial, development, engineering, and other technical expertise are necessary.

Reference for Further Information: Baker & Daniels, *Local Government Funding Sources*, Seventh Edition, July 1995, Baker & Daniels, 300 North Meridian Street, Suite 2700, Indianapolis, Indiana 46204. Telephone Number: 317-237-0300. This excellent handbook describes a variety of local government funding sources, focusing on Indiana. USEPA Environmental Financial Advisory Board Brownfields Report No. 3: *Financing Strategies for Brownfields Redevelopment*, March 1996. USEPA, 401 M Street, SW, Washington, DC 20460. Mail Code:2731R. Contact: EFAB staff member: Timothy McProuty at mcprouty.timothy@epa.gov

OTHER

Description:

Actual Use:

Potential Use:

Advantages:

Limitations:

Reference for Further Information:

COMPARISON MATRIX FOR COMMUNITY-BASED PROTECTION

Criteria/ CBEP Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leveraging	Environ- mental Benefits
Adopt-an- Animal/Habitat Programs	Mod.	Low	Mod.	High	Low	Mod.
Affinity Merchandise	High	Low	High	High	Low	Mod.
*Agriculture: FSA Conservation Reserve Program	High	High	Mod.	Mod.	High	High
Agriculture: NRCS Wetlands Reserve Program	Mod.- High	Mod.- High	Mod.	Mod.	Low	High
Assurances	Low	Low	Low - Mod.	Low - Mod.	High	High
*Capital Improvements Program	High	High	Mod.	High	High	Mod.
*Community Foundations	High	Mod.	Mod.	High	High	Mod.
*Conservation Easements	High	High	Mod.	Mod.	High	High
*Conservation Partnerships	High	Mod.	Low - Mod.	Mod.	High	Mod.
*Contributions of Land	High	High	High	Mod.	Mod.	Mod.

COMPARISON MATRIX continued

Criteria/ CBEP Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
Cost-Sharing for Livestock Waste Storage Programs	Low	Low	Mod.	Low - Mod.	High	High
*Dedicated Government Trust Funds	High	High	Mod.	Mod.	High	High
Ecotourism	Mod.	Low	Mod.	Low	Mod.	Mod.
Emissions Trading	Low	Low - Mod.	Low	Mod.	Mod.	Mod.
Environmental Lotteries	Low	Mod.	Mod.	Low	Low	Mod. - High
Environmental Revolving Funds	Mod.	High	Mod.	Mod. - High	High	High
Green Credit Card	Low	Low	Low	Mod.	Mod.-High	High
*Individual and Corporate Donations	High	High	High	High	High	High
*Land Trusts and Reclamation Banks	High	High	Low - Mod.	High	High	High
Mini Bonds For Stream Restoration	Low	Low	Low - Mod.	High	Mod.	High

COMPARISON MATRIX continued

Criteria/ CBEP Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
*Mitigation Lands and Banking	High	Mod. - High	Mod.	Mod.	High	High
Municipal Utility Asset Sales	Low	High	Low	Mod.	Mod. - High	Low - Mod.
*Non-Profit Organizations	High	High	Mod.	High	High	High
Point/ Nonpoint Source Trading	Low	Low	Low	Mod.	Mod. - High	High
*Special Districts	High	High	Mod.	Mod.	Mod.	High
*Tax Increment Financing - CBEP	Mod.	Mod.	Mod.	High	Mod.	High

High - High use (over 25 States/many localities); criteria score high (e.g., program is specific, manageable, accessible, cost/effective, etc.)

Mod.- Moderate use (10-25 States/some localities); criteria score in medium range

Low- Low or rare use; scope is limited; one or more major implementation problems exist

*Star indicates best rated mechanisms

9. TOOLS FOR FINANCING BROWNFIELDS REDEVELOPMENT

TOOLS FOR FINANCING BROWNFIELDS REDEVELOPMENT

INTRODUCTION

The term, “brownfields”, refers to any abandoned, idled, or under used site (whether, urban, rural, industrial or non-industrial) where expansion or redevelopment is complicated by real or perceived contamination. This term distinguishes them from “greenfields”, or undeveloped properties located mainly in suburban or rural areas. Although the full extent of the problem of environmental contamination is not known, the United States General Accounting Office estimated in 1996 that there are about 450,000 brownfields sites across the country.

While many factors can influence economic development decisions, the existence or fear of contamination, often steers development to greenfields. This promotes the use of undeveloped land, contributing to urban sprawl, increased traffic congestion, and habitat destruction. It also limits the reuse of brownfields, hurting economic growth in cities. Since many brownfields are located in poor and minority communities, such economic decisions may also raise environmental justice concerns. Failure to address the brownfields issue will relegate substantial portions of our cities to environmental and economic wastelands.

The Environmental Protection Agency believes a “environmental cleanup is a building block, not a stumbling block, to economic development,” and that cleaning up brownfields properties must go hand-in-hand with bringing economic vitality to communities. Environmental policy makers must understand the major role of finance in brownfields redevelopment. Similarly, the development community must understand the importance of environmental requirements. Without adequate linkages between environmental and financing realities, sustainable brownfields redevelopment will remain problematical. Most of the financing tools presented here are deeply rooted in local community goals, and combine both the public and private sectors in a variety of different kinds of financing arrangements.

This section evaluates financing tools which the federal government, States, communities, and the private sector can use to finance brownfields cleanup and redevelopment. Twenty-three ways of raising revenues, lowering costs, and influencing behavior are discussed. The tools include traditional governmental assistance programs, bold new initiatives that target brownfields sites and disadvantaged communities, innovative private sector arrangements, risk limitation techniques, powerful tax incentives, and use of the Drinking Water and Wastewater State Revolving Funds. In addition to the tools discussed in other parts of the Guidebook, including special taxes, fees, bonds, loans, credit enhancements, technical assistance, and community-based environmental financing mechanisms.

**LIST OF TOOLS FOR FINANCING BROWNFIELDS REDEVELOPMENT
(In Alphabetical Order)**

- *1. Brownfields Cleanup Tax Deduction
- *2. Clean Land Fund (Revolving Fund)
- *3. Community Development Financial Institutions
- *4. Empowerment Zones/Enterprise Communities
- *5. Environmental Insurance
- *6. Environmental Liability Releases/Agreements
 - 7. EPA: Brownfields Assessment Demonstration Pilots
 - 8. EPA: Brownfields Workforce Development
 - 9. EPA: SRF Brownfields Loans (Clean Water)
- 10. EPA: Superfund Trust Fund
- *11. Environmental Risk-Management (Real Estate)
- *12. Federal Assistance Programs
 - 13. Industrial Development Funds
 - 14. Land Reclamation Banks
 - 15. Land Recycling Companies
 - 16. Property Parcelization
- * 17. Qualified Empowerment Zone Facility Bonds
 - 18. Real Estate Investment Trusts
- * 19. State Voluntary Cleanup Programs
- * 20. Tax Abatements
- * 21. Tax Incentives
 - 22. Tax Increment Financing
 - 23. Transferable Development Rights

* Stars indicate most highly rated mechanisms as described in the Comparison Matrix at the end of the narratives. See Introduction to the *Guidebook* for a description of the criteria used. Ratings of “High”, “Moderate”, “Low” are for comparison purposes only, as some ratings are necessarily subjective and data are incomplete.

BROWNFIELDS CLEANUP TAX DEDUCTION

Description: The Taxpayer Relief Act of 1997 broadened the concept of the increased Section 179 deduction (see also **Section 6., Expensing of Assets**) to include qualified environmental cleanup costs both inside and out of empowerment zones and enterprise communities. A qualified business can elect to deduct costs paid or incurred after August 5, 1997, to abate or control a hazardous substance as defined by sections 101(14) and 102 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, but not covered by Section 104(a)(3) at a qualified contaminated site in the tax year of the costs. Expensing rather than capitalizing such costs (adding them to the basis for depreciation) can be a major benefit, depending on otherwise taxable income. Targeted areas include census tracts with poverty rates of at least 20%, census tracts with populations of less than 2,000 and more than 75% of their land zoned for commercial or industrial use and a common border with one or more tracts having poverty rates of at least twenty percent, empowerment zones, supplemental empowerment zones, enterprise communities, and EPA brownfields pilot project sites. A qualified contaminated site must be held for use in a trade or business, for the production of income, or as inventory and there has to have been a release, threat of release, or disposal of a hazardous substance at or on the site. Sites on EPA's Superfund National Priorities List are excluded. A maximum dollar limit is not imposed but there is a limit on property used in connection with abatement or control of hazardous substances.

Actual Use: Use has been less than hoped since the deduction was made available in 1997.

Potential Use: The deduction can be used to reduce taxable income and federal tax liability.

Advantages: This change in federal tax law allows purchasers of qualified contaminated property to deduct their environmental remediation expenses. The value of the deduction depends on the extent to which it reduces income tax liabilities. Because cleanup costs can be deducted, brownfields property can be more likely to be redeveloped as well as more valuable in the real estate market.

Limitations: The deduction may have to be recaptured as ordinary income under Section 1245 when the property is sold. Expenditures paid or incurred after December 31, 2000, are not covered.

Reference for Further Information: Consult a tax practitioner and the State environmental agency regarding certification of a property as eligible. U.S. EPA, Office of Solid Waste and Emergency Response, Outreach and Special Projects Staff, Washington, DC 20460, Telephone: 202-260-3525, <http://www.epa.gov/swerosps/bf/>. Internal Revenue Service, 1111 Constitution Avenue, NW, Washington, DC 20224, Telephone: 800-829-1040 or 703-321-8020, Fax: 703-368-9694, www.irs.ustreas.gov/. See Revenue Procedure 98-17 for directions on requesting written guidance on the tax treatment of environmental cleanup costs for projects spanning several years.

CLEAN LAND FUND

Description: The Clean Land Fund is a private sector, non-profit environmental organization dedicated to providing financing for brownfields revitalization. The Fund is a collaborative effort between businesses, communities, and environmentalists. It is structured as a sustainable, leveraged revolving fund and will make loans for financing the acquisition, remediation, and reuse of brownfields properties. The Fund will make these loans to non-profit and for profit brownfields owners and/or developers and will manage the environmental and financial risks associated with these types of real estate development projects.

Actual Use: The Clean Land Fund is in the developmental state and plans to be operational in the near future. A number of localities already have set up revolving loan funds to finance a variety of local infrastructure projects. The Economic Development Administration and the United States Environmental Protection Agency are supporting the creation of revolving funds in cities around the nation to finance economic development and brownfields cleanup projects respectively.

Potential Use: Credit-worthy non-profit and for-profit borrowers located in the Northeast and Mid-Atlantic will be able to access loan monies from the Clean Land Fund when it is operational. Sources of projects to be financed will include small and medium-sized companies and municipalities, and possibly some financial institutions. The brownfields revolving fund concept is potentially replicable by States, cities, communities, and/or non-profit organizations nationwide. Loans could be combined with Clean Water SRF loans and other funding sources.

Advantages: The Clean Land Fund will be financed by contributed capital leveraged by debt capital and does not require a commitment of federal resources. The Fund's credit enhancements will leverage additional monies into a diversified loan pool to reduce risks. The non-profit nature of the Fund will reduce the interest rates needed on loans to protect its financial stability.

Limitations: The Fund will only be able to provide loans at good taxable rates in line with its own capital borrowing and investments. Loan interest rates must be set at a high enough level to cover the interest costs of the debt capital of the Fund.

Reference for Further Information: William J. Penn, Environmental Financial Advisor, P O. Box 725, Block Island, RI 02807, Telephone/Fax: 401-66-2065. E-mail: 102024,2544@CompuServe.com.

COMMUNITY DEVELOPMENT FINANCIAL INSTITUTIONS

Description: Community Development Financial Institutions (CDFI's) are specialized private financial institutions that fill niches in the market that banks and other traditional financial organizations do not serve. CDFI's focus on economic development by providing capital and technical expertise to communities in these market niches. Because of the broad needs of these communities, CDFI's include such diverse entities as community development banks and intermediaries, credit unions, housing funds, loan funds, micro-loan funds, and venture capital funds.

Actual Use: CDFI's of various types have been in existence for more than 30 years. The South Shore Bank in Chicago and the Community Preservation Corporation in New York are two notable examples. The number of CDFI's have increased significantly since 1980's. CDFI's have taken innovative and lead roles in facilitating development and creating jobs in distressed communities.

The CDFI concept received new stimulus with the creation of a CDFI Fund at the U.S. Department of Treasury (see **Section 10.B., Treasury: Community Development Financial Institutions Fund**). In Fiscal Year (FY) 1997, Treasury issued 48 awards obligating over \$37 million in grants. For FY 1998, Treasury issued 50 awards obligating an estimated \$62 million. Award amounts ranged from \$78,500 to \$3,200,000 and averaged \$797,902. Organizations funded have included community development banks, credit unions, loan funds, venture capital funds, micro-loan funds, community development intermediaries, housing funds and multi-purpose CDFI's. The **Rural Community Assistance Corporation** described in **Section 5.A.** was one of those organizations so named.

Potential Use: These CDFI's could take lead in promoting the cleanup and redevelopment of the many brownfields properties located in distressed communities across the nation. They could serve as intermediaries for leveraging and delivering a variety of public and private incentives, capital and financial outreach services to these areas.

Advantages: Many CDFI's have extensive community development expertise and experience in applying that expertise in economically distressed areas. These institutions have earned the trust of the residents of distressed areas and understand their special needs and concerns.

Limitations: CDFI's are often small, under-capitalized institutions and may have to rely heavily on public subsidies. They may be limited in experience with brownfields and/or in the number of development projects, brownfields or otherwise, that they can sustain at any one time.

Reference for Further Information: U.S. Department of the Treasury, Community Development Financial Institutions Fund, 1500 Pennsylvania Avenue, NW, Washington, DC 20220. Telephone: 202-622-8662.

EMPOWERMENT ZONES/ENTERPRISE COMMUNITIES

Description: Empowerment Zones and Enterprise Communities (EZ's/EC's) are designated geographic areas, usually distressed, to which special incentives and monies are targeted for development purposes. EZ's/EC's may be set up by city, State, or federal governments and may receive benefits ranging from financial to regulatory to technical assistance from these governments.

Actual Use: The federal government created a national EZ/EC Program in 1993 to revitalize distressed urban and rural communities. The program seeks to create economic opportunities; improve physical, environmental, community, and human resources; and build partnerships between governments. All levels of governments have important roles. The federal government removes regulatory barriers, simplifies rules, coordinates programs, and allocates part of their private activity bond caps. Local governments involve communities, develop plans, leverage private resources with public capital, and streamline local actions. In 1995, nine empowerment zone and ninety-eight enterprise community winners were selected. The federal assistance included over \$1 billion in grants, special tax benefits, and priority funding/special consideration under other federal programs. Independent of this federal initiative, more than thirty States administer their own enterprise zone programs to spur investment in distressed areas. Many of these programs have been operating since the 1980's, and States have designated over 1,400 zone areas as of this date.

Potential Use: The federal government proposes to designate 15 new urban EZs in 1999. These new EZs would receive tax incentives and proposed funding is \$10 million per year for each EZ for a period of ten years. Significant brownfields problems have been identified in many EZ's/EC's. There exists in the context of federal and State programs to revitalize all of these communities opportunities to channel benefits to brownfields assessment, cleanup and redevelopment activities.

Advantages: The EZ/EC idea targets and concentrates on federal, State, and local resources and benefits on communities with great needs, including environmental ones. This increases chances for impact and success in these efforts.

Limitations: The EZ/EC concept by its very nature cannot reach the great majority of communities/citizens because it targets resources and benefits to a limited number of areas.

Reference for Further Information: U.S. EPA Environmental Financial Advisory Board (EFAB) report, *Financing Brownfields Redevelopment: Linkages to the Empowerment Zone/Enterprise Community Program*, Contact: Timothy McProuty at mcprouty.timothy@epa.gov. U.S. Department of Housing and Urban Development (HUD), Office of Community Planning and Development, 451 7th Street, SW, Washington, DC 20203, Telephone: 202-401-1020. U.S. Department of Agriculture (USDA), Office of Community Development, 300 7th Street, SW, Washington, DC 20024, Telephone: 202- 619-7981.

ENVIRONMENTAL INSURANCE

Description: Environmental insurance can be a cost-effective way to limit the risk of having to pay for unforeseen environmental cleanup. Such insurance is an environmental management tool for managing a party's environmental liability by transferring some of the associated financial risk to another party (under the very limited provisions of the policy). Essentially, it is an agreement that in return for premium payment(s) and/or payment of a set negotiated deductible amount, the insured party is provided some protection against unanticipated costs, third party claims, the acts or omissions of other parties, and impairment of property values. Environmental insurance policies may facilitate (make possible) some real property transactions and help resolve environmental liability disputes.

Actual Use: Through years of hard-earned experience, the insurance industry has gradually developed environmental insurance as a discrete subset of property and casualty insurance. There can be many different names for environmental insurance policies, but the most three common types that apply to brownfields and other contaminated properties include property transfer insurance, cleanup cost cap or stop loss insurance, and owner-controlled insurance. These policies are offered by a growing number of firms with typical coverage ranging from \$2 to \$10 million. Minimum coverage for most policies starts at \$100,000 and maximum coverage for policies can reach \$40 million. In 1996, environmental insurance premiums averaged \$5,000 per \$ 1 million of coverage.

Potential Use: Environmental insurance is increasingly available and desirable for any and all real estate/business projects involving the assessment, cleanup and redevelopment of brownfields and other contaminated properties.

Advantages: Environmental insurance can transfer certain carefully-defined, environmental risks. In brownfields projects, it may substitute for, or shore up, indemnities and hold-harmless agreements lessening the purchaser's need to worry about the seller's financial condition. It may also eliminate the need to report brownfields as environmental liabilities. Some environmental insurance policies require the insurer to pay covered costs up-front and not on a reimbursement basis after cleanup.

Limitations: Environmental insurance policies may require a substantial up-front premium payment, have substantial deductibles, and set strict caps on monetary payouts. These policies may be prohibitively expensive for some brownfields owners and developers.

Reference for Further Information: U.S. EPA publication 500-R-96-001, *Potential Insurance Products for Brownfields Cleanup and Redevelopment*, U.S. EPA, Office of Emergency and Remedial Response, 40 M Street, SW, Washington, DC 20460, Mail Code (5101), Telephone: 202- 260-4610, Fax: 202-260-3527. There are many environmental insurance sites and home pages on the World Wide Web. They can be accessed using the commonly offered web browsers.

ENVIRONMENTAL LIABILITY RELEASES/AGREEMENTS

Description: An environmental liability release agreement is a benefit (concession) granted by federal, State, and/or local governments to owners or operators of facilities of businesses (including commercial real estate properties) that frees them from all or part of responsibility for environmental cleanup costs under federal, State, and/or local laws. These liability agreements may be structured in advance for prospective purchasers of properties or negotiated between the public sector and private owners/developers with specified conditions delineating the extent of liability relief granted and the degree of private contribution to any planned and/or unanticipated cleanup effort.

Actual Use: More than thirty State governments offer some type release of environmental liability within the context of voluntary cleanup or other programs to remediate contaminated properties. While these liability agreements generally focus on the less contaminated properties known as brownfields, they have also been used at sites that are on the federal Superfund National Priority List. The most common types of environmental liability agreements offered by State governments include covenants-not-to-sue, no-further-action letters, and certificates-of-release.

Potential Use: All fifty States could incorporate environmental liability agreements within voluntary cleanup programs or other State efforts to support brownfields redevelopment as well as hazardous waste cleanup efforts. During Superfund preauthorization, protections in environmental liability agreements may be reexamined, clarified, and/or expanded with regard to municipalities, prospective purchasers, innocent landowners, small businesses, and other private parties.

Advantages: Environmental liability agreements may provide considerable comfort to potential owners, developers, lenders, and investors with regards to contaminated or potentially contaminated properties. To the extent that these releases can help control and quantify the risks associated with investment in brownfields and other contaminated properties, they will help spur the cleanup and redevelopment of those sites.

Limitations: The liability agreements envisioned are rarely total, and coordination between all levels of government is often not uniform or necessarily easy. Every liability release granted to a public or private party currently or potentially responsible for environmental contamination cleanup costs represents resources that must be found elsewhere.

Reference for Further Information: State Voluntary Cleanup Programs. U.S. EPA, Office of Solid Waste and Emergency Response, 401 M Street, SW, Washington, DC 20460, Mail Code: 5101, Telephone: 202-260-4610, Fax: 202-260-3527. U.S. EPA Environmental Financial Advisory Board (EFAB) report: *Financing Brownfields Redevelopment*, U.S. EPA 401 M Street, SW, Washington, D.C. 20460, Fax: 202-565-2587.

ENVIRONMENTAL PROTECTION AGENCY BROWNFIELDS ASSESSMENT DEMONSTRATION PILOTS

Description: Brownfields Assessment Demonstration Pilots are an important part of the Environmental Protection Agency's (EPA) Brownfields Economic Redevelopment Initiative. These pilots are designed to empower State, communities, and other stakeholders in economic redevelopment to work cooperatively in a timely manner to assess, cleanup, and sustainable reuse brownfields properties. The pilots seek to test redevelopment models, remove regulatory barriers without sacrificing protection, and facilitate coordinated public and private efforts at the federal, State, and local levels.

Actual Use: Through March 1999, EPA had awarded 227 Brownfields Demonstration Assessment Pilots (170 National Pilots and 57 Regional Pilots) distributing more than \$42 million to a wide range of States, cities, towns, counties and Tribes. These pilots are funded through cooperative agreements that offer assistance of up to \$200,000 over a two-year period. In addition, EPA awarded 24 of the Assessment Pilots further assistance in the form of Brownfields Cleanup Revolving Loan Fund grants of up to \$350,000. All told, these grants have leveraged over \$1 billion for redevelopment and created over 2,500 jobs.

Potential Use: EPA expects to select up to 100 additional National Assessment Pilots in Fiscal Year 1999. The Agency estimates that it will obligate up to \$66 million in cooperative agreements during Fiscal Year 1999 for all types of brownfields projects -- including Assessment Pilots, Cleanup Revolving Loan Fund Pilots, and Job Training and Development Demonstration Pilots..

Advantages: For the States, local governments, and tribes awarded EPA Brownfields Pilots, the assistance provided through these two Programs can help them overcome the barriers that brownfields assessment and cleanup cost may represent. Funding recipients may be able to use this federal assistance to leverage additional money, both public and private, from other sources.

Limitations: This type of federal funding assistance for brownfields projects is limited to fewer than 100 governmental jurisdictions. The funding available is only large enough to help fund the assessment and cleanup of a small percentage of the total number of brownfields sites nationwide.

Reference for Further Information: U.S. EPA, Office of Solid Waste and Emergency Response, Outreach and Special Projects Staff, 401 M Street, SW, Washington, DC 20460, Telephone: 202-260-1223. U.S. EPA, Brownfields Applications, Superfund Document Center (5201G), 401 M. Street, SW, Washington, DC 20460. The Brownfields web site located on the U.S. EPA Home Page at <http://www.epa.gov/swerosps/bf/pilots.htm> has information on applying for the pilot programs, as well as other mechanisms for funding brownfields cleanup and redevelopment.

ENVIRONMENTAL PROTECTION AGENCY BROWNFIELDS WORKFORCE DEVELOPMENT

Description: The Environmental Protection Agency (EPA) seeks to build partnerships with States, cities, local job training organizations, community colleges, and other federal agencies to foster job training and workforce development in brownfields communities. These efforts help ensure that communities have the trained workforce needed to revitalize contaminated properties and that community members have a chance to compete in the economic mainstream. The Agency seeks to facilitate cleanup and prepare trainees for employment in environment fields (e.g., sampling, analysis and site remediation).

Actual Use: EPA funded eleven Brownfields Environmental Job Training and Development Demonstration Pilot Projects in 1998, at an average of \$200,000 each for two years. EPA and the Department of Labor's (DOL's) Employment and Training Administration (ETA) are supporting pilot projects in which ETA provides information and technical assistance to state Job Training Partnership Act (JTPA) liaisons and community-based JTPA programs. EPA is also working with the Department of Health and Human Services' (HHS') National Institute of Environmental Health Sciences (NIEHS) and Office of Community Service (OCS) to ensure that Minority Youth Worker Training Program grants are tied closely to ongoing activities in brownfields pilot cities. EPA and the Department of Education's Office of Vocational and Adult Education are identifying outreach mechanisms for local public schools regarding brownfields efforts. EPA and the Department of Veterans Affairs are working to establish policies and procedures aimed at providing trained veterans to work in brownfields projects.

Potential Use: While job training and workforce development in and around brownfields communities can make essential contributions to cleanup and redevelopment, it also can equip those trained with knowledge and skills required for further employment dealing with hazardous chemicals and environmental contamination problems.

Advantages: EPA's Brownfields Economic Redevelopment Initiative is designed to prove that economic development and the environment can co-exist.

Limitations: Interagency and intergovernmental coordination tends to be time-consuming and can be difficult. Eligibility for this effort is limited to 121 brownfields pilot cities and EPA's staff resources limit its applicability beyond these locations.

Reference for Further Information: U.S. EPA, Office of Solid Waste and Emergency Response, Outreach and Special Projects Staff, Mail Code:5101, Washington, DC 20460, Telephone: 202-260-6285, Fax: 202-260-6606, Internet: <http://www.epa.gov/swerosps/bf/>.

ENVIRONMENTAL PROTECTION AGENCY
SRF BROWNFIELDS LOANS
(Clean Water)

Description: There are fifty-one Clean Water State Revolving Fund (CWSRF) programs (one in each State and Puerto Rico). These programs are capitalized through federal and State contributions, and operate as banks making low or no interest loans to communities and other eligible public recipients for water quality projects. The loans are repaid over terms as long as twenty years and repayments are recycled to fund other water quality projects. See also the related writeup in **Section 2.B., Environmental Protection Agency State Revolving Fund - Clean Water.**

CWSRF resources may in certain circumstances be available to augment the resources available under the Environmental Protection Agency's (EPA's) Brownfields Initiative to assess, cleanup, and redevelop brownfields. Brownfields are abandoned or are under-utilized former industrial and commercial sites that are or may be environmentally contaminated. There are more than 450,000 of these brownfields sites nationwide.

Actual Use: The CWSRFs in some States may already be making loans to communities for eligible brownfields-related water quality projects. However, the authors are currently (April 1999) not aware of any firm loan information in that regard.

Potential Use: Examples of brownfields mitigation activities that correct or prevent water quality problems, and may be eligible for CWSRF funding include the abatement of polluted runoff, control of stormwater runoff, correction of groundwater contamination, and remediation of petroleum contamination.

Advantages: The CWSRFs have more than \$27 billion in assets and fund nearly \$3 billion in projects a year. They are established entities with proven environmental and financial track record.

Disadvantages: The total costs of the water quality needs of applicants far exceed the loan resources of the CWSRFs. Any eligible brownfields project must compete with all other water quality projects for a place on the particular State's CWSRF priority funding list.

Reference for Further Information: The Clean Water State Revolving Loan Funds programs in each State and Puerto Rico. U.S. EPA, Office of Water, The Clean Water State Revolving Fund Branch, 401 M Street, SW, Washington 20460, Mail Code: 4202, Telephone: 202-260-7359, Fax: 202-260-1827, Internet: <http://www.epa.gov/owm>. U.S. EPA, Office of Solid Waste and Emergency Response, Outreach and Special Projects Staff, 401 M Street, SW, Washington, DC 20460, Mail Code: 5101, Telephone: 202-260-4039, Fax: 202-260-6606, Internet: www.epa.gov.brownfields.

**ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TRUST FUND**

Description: The Superfund Trust Fund, also known as the Hazardous Substance Response Trust Fund, was established in 1990 to pay for cleanup and enforcement activities at waste sites. This dedicated trust fund has historically been financed primarily by petroleum excise taxes, chemical feedstock excise taxes, and environmental income taxes. The fund has also received monies through cost recoveries from parties determined responsible for contaminating particular sites, penalties, income taxes, and interest income.

Actual Use: The Superfund Program has cleanup activities, short-term removal actions and/or long-term remedial actions, underway or planned for the approximately 1300 seriously contaminated sites on the Environmental Protection Agency's (EPA's) National Priority List. Actions at Orphan Sites, where no responsible party can be identified, are funded by the Trust Fund. The Trust Fund also funds actions begun at sites with responsible parties but prior to a final determination and acceptance of liability. More than 400 of these seriously contaminated sites have been brought to the "construction complete phase" -- an advanced milestone in the cleanup process.

Superfund Trust Fund monies are also being used to fund brownfields national demonstration pilots as part of USEPA's Brownfields Economic Redevelopment Initiative (see **Section 9., Brownfields Assessment Demonstration Pilots**).

Potential Use: Use of the Trust Fund to fund brownfields projects similar to the pilot projects in the Brownfields Economic Redevelopment Initiative could be further expanded to include sites in communities across the nation.

Advantages: The Trust Fund is potentially a large source of monies for the cleanup of hazardous waste sites, including brownfields. The Trust Fund's use in this effort could be further leveraged through traditional credit enhancement mechanisms such as leveraged revolving loan funds.

Limitations: There are statutory restrictions on the use of monies in the Superfund Trust Fund monies. In addition, any resources committed to brownfields sites represent resources unavailable for use at the more seriously contaminated sites found on the National Priority List.

Reference for Further Information: U.S. EPA, Office of Solid Waste and Emergency Response, 401 M Street, SW, Washington, DC 20460, Mail Code: 5101, Telephone: 202-260-4610, Fax: 202-260-3527. U.S. EPA Environmental Financial Advisory Board (EFAB) report, *Leveraging the Superfund: Ideas and Opportunities*, USEPA, 401 M Street SW, Washington, DC 20460, Mail Code: 2731R, Contact: Tim McProuty at mcprouty.timothy@epa.gov.

ENVIRONMENTAL RISK-MANAGEMENT (REAL ESTATE)

Description: The real estate industry faces serious environmental uncertainties, representing potential financial risks, that can negatively affect the willingness and ability of property owners, purchasers, developers, investors, and lenders to participate in brownfields redevelopment. The environmental risks at these properties fall into three categories: cleanup, property value impairment, and personal injury. Parties involved in brownfields real estate transactions can reduce or eliminate these risks using a number of environmental risk-management techniques. The techniques either absorb risks, transfer risks among involved parties, or transfer risks to a third party. They include:

- C *Indemnification* - The seller agrees to cover costs to the purchaser resulting from specific risks.
- C *Price Adjustment* - The seller reduces the property price to reflect potential contamination risks.
- C *Self-Insuring* - The purchaser sets aside monies to cover the costs of potential environmental risks.
- C *Third-Party Insurance* - The seller/purchaser buys insurance to cover potential environmental risks.

Actual Use: These techniques are used by private parties to make real estate transactions work. Indemnification has been used for a long time, but may be giving way to other techniques. Price adjustments may be the most common private technique used in brownfields transactions. Self-insuring is used most often by large and/or economically strong firms, or by firms confident of their environmental assessment. In addition, the use of environmental insurance is increasing (see **Section 9., Environmental Insurance**).

Potential Use: Environmental insurance is increasingly available and affordable. Its use may be expected to continue to grow. All of these tools will continue to be used to some extent, especially in transactions that do not entail significant contamination or in support of public sector assistance.

Advantages: Given favorable circumstances, all of these risk-management techniques can fully transfer risks and make otherwise unworkable brownfields redevelopment transactions occur.

Limitations: Many sellers and buyers may be too small to be indemnitors. An indemnity is worth only as much as the indemnitor. Regulatory agencies will pursue a party regardless of indemnification. Price reductions and risk assumptions may be too large for some parties or exceed the value of transactions. Transferring risks between parties may lead to contract disputes, or parties may be unwilling or unable to meet their obligations. Insurance may not be affordable.

Reference for Further Information: Hollingshead, Susan, M., *Environmental Insurance for Real Estate Valuation*, "Brownfields 96" Conference Presentation, September 1996, Pittsburgh, PA. U.S. EPA report, *Potential Insurance Products for Brownfields Cleanup and Redevelopment*, U.S. EPA, Office of Emergency and Remedial Response, 1235 Jefferson Davis Highway, Arlington, VA 22203, Telephone: 703-603-8960, Fax: 703-603-9146.

FEDERAL ASSISTANCE PROGRAMS

Description: The federal government through its departments, agencies, and other establishments offers a broad range of programs, projects, services, and activities that provide assistance to eligible parties for eligible purposes. This assistance may take the form of direct payments, grants, loans, credit enhancements, technical support, etc. Brownfields assessment, cleanup, and redevelopment activities are, or may be, eligible activities under a substantial number of these federal efforts.

Actual Use: During the past two years, the Environmental Protection Agency (EPA) has awarded \$13.2 million in grants to 76 States, cities, towns, counties, and Tribes nationwide to fund Brownfields Assessment Demonstration Pilots. EPA plans to award another 25 Assessment Pilots in 1997 and up to 300 Brownfields Pilots over the next four years (see page 9-4, Brownfields Assessment Demonstration Pilots). The Department of Housing and Urban Development (HUD) approved in 1996 a \$50 million project to cleanup and redevelop a number of brownfields sites in Chicago. This is the first brownfields project financed by a loan guarantee using entitlements under HUD's Community Development Block Grant (CDBG) Program as collateral.

Potential Use: Federal programs that may have the potential to contribute additional and/or new funding to brownfields activities include:

- c Appalachian Regional Commission Supplemental Grants Program - see **Section 2.C.**;
- c CDBG Programs - see pages in **Section 2.C.**;
- c Economic Development Administration Grant Programs - see pages in **Section 2.C.**;
- c Empowerment Zone/Enterprise Community Program - see **Section 9.**;
- c Rural Business-Cooperative Service Grant and Loan Programs - see **Sections 2.B.** and **2.C.**;
- c Rural Utilities Service Grant Programs - see pages in **Section 2.C.**; and
- c Rural Housing Service Loan Programs - see **Section 2.B.**.

Advantages: Federal grants provide State and local governments with the means of meeting many national goals. They may provide funds otherwise unavailable to State or local programs, thus enhancing equity, environmental incentives, and financial leveraging considerations.

Limitations: Funds must be targeted to specific statutory goals. Brownfields activities must compete for limited funds and follow federal rules, terms and conditions. Grants may be very specific, limiting State and local flexibility.

Reference for Further Information: *Catalog of Federal Domestic Assistance*. Its World Wide Web site is at <http://aspe.os.dhhs.gov/cfda/index.htm>. Requests for magnetic tapes, diskettes, or CD-ROM should go to the Federal Domestic Assistance Catalogue Staff (MVS), General Services Administration, 300 7th St., SW, Washington, DC 20407, Telephone: 202-708-5126.

INDUSTRIAL DEVELOPMENT FUNDS

Description: Industrial Development Funds are special funds established by State and local governments for the purpose of improving real estate properties in order to make them suitable for industrial development. These funds are economic development tools that governments use to attract or retain industry. Industrial Development Funds may be structured as direct pass-through funds or as special purpose revolving funds. They draw funding through a variety of mechanisms including special property and other taxes, industrial development bonds, unappropriated surpluses in the controlling government's budget, and the proceeds from the sale of real estate and other property.

Actual Use: Many States, cities, towns, and counties have laws establishing Industrial Development Funds or related economic development funds. These funds may be operated by established government economic development agencies or they may fall under the jurisdiction of special-purpose authorities or corporations. One example of this latter form are quasi-governmental, non-profits corporations that answer to the controlling government through an appointed board.

Potential Use: Industrial Development Funds and related economic development funds are ideally suited to working with brownfields properties. They may already have experience in assessing, cleaning up, and redeveloping brownfields properties, or they may just need to expand their existing expertise acquired in improving less-contaminated properties. These funds could either handle brownfields properties as part of their overall real estate portfolio, or they could be reconstituted as brownfields development funds handling only brownfields properties.

Advantage: These funds are well-established and familiar economic development tools. Their purpose and expertise are closely tied to many of the same types of activities and goals that are necessary in successful brownfields redevelopment.

Limitation: The addition of brownfields properties may degrade an Industrial Development Fund's real estate portfolio. Such funds may not be economically viable if they handle only brownfields properties. Legislation may be needed to establish an Industrial Development Fund and/or the sources of financial capital required to operate it.

Reference for Further Information: Baker & Daniels document, *Local Government Funding Sources*, Seventh Edition, July 1995, Baker & Daniels, 300 North Meridian Street, Suite 2700, Indianapolis, IN 46204, Telephone: 317-237-0300. This book describes various funding sources for local governments, focusing quite naturally on Indiana.

LAND RECLAMATION BANKS

Description: Land reclamation banks are publicly funded or capitalized trust funds that actively acquire, manage, assess, cleanup, and develop properties, including brownfields, on behalf of a State or local government. These banks may be financed in wide variety of ways, including tax-increment financing, land transfer taxes, land registration fees, and property sales and leases. Land reclamation banks may take title to properties via tax foreclosure, eminent domain, or purchase. Once properties are cleaned up and developed, the bank sells or leases them to generate income for future development projects.

Actual Use: The Minneapolis Light Industry Land Acquisition Program is an example of a land reclamation bank. The program on behalf of the City of Minneapolis spends about \$5 million per year to acquire, assess, cleanup, and redevelop potentially contaminated industrial sites. Funds for the program are generated by tax-increment financing plan and used for both site purchase and cleanup. The City assumes all liability for cleanup and resells the land to private purchasers following completion of redevelopment.

Potential Use: Land reclamation banks could be used in cities and communities across the country able and willing to fund or capitalize their start up costs. They could prove especially valuable in cleaning up and redeveloping properties when used in combination with other financing concepts such as EZ/EC programs. They could be specifically structured as brownfields reclamation banks to focus and direct local efforts toward brownfields cleanup and redevelopment.

Advantages: Land reclamation banks combine planning, financing, management, cleanup, and redevelopment functions in a single organization allowing local efforts to be focused. Land reclamation banks may elect to assume environmental and financial liability risks that the private sector is unwilling to bear.

Limitations: Legislation may be necessary to establish a land reclamation bank. Considerable funding/capitalization may be necessary for a bank's startup and operational costs. There may be institutional pressure against consolidating many functions and authorities in a single agency or entity. If not run efficiently and successfully, they may be a resource drain on the public treasury.

Reference for Further Information: U.S. EPA Environmental Financial Advisory Board (EFAB) report, *Strategies for Financing Brownfields Redevelopment*, March 1996, U.S. EPA, 401 M Street, SW, Washington, DC 20460, Mail Code: 2731R, Fax: 202-260-0710, Contact: Tim McProuty at mcprouty.timothy@epa.gov.

LAND RECYCLING COMPANIES

Description: Land Recycling Companies are 501(c)(3) non-profit organizations that seek to provide an innovative and energetic response to the problems of potentially contaminated brownfields properties that affect communities across the country. These organizations identify brownfields properties, serve as information clearinghouses, seek to bring together members of the communities, government agencies, financial institutions, and the other private parties necessary to make brownfields redevelopment work. Land Recycling Companies may also help finance brownfields assessment and cleanup activities.

Actual Use: Land Recycling Companies have been formed and begun work in a number of States. For example, the Pennsylvania-based Phoenix Land recycling Company focuses on reducing brownfields uncertainties by using its own resources to conduct assessments and develop cleanup plans. Phoenix was founded by Clean Sites, Inc., a respected, national environmental organization, with funding support from the Vira I. Heinz and Howard Heinz Endowments, as well as other philanthropic organizations. The California Center for Land Recycling provides a somewhat different model for this tool. The California Center focuses on identifying brownfields development opportunities and works to assemble the public and private partners needed to carry out successful projects. It will also serve as an educational partner by documenting and publicizing the lessons learned during these projects. The California Center for Land Recycling is run by the Trust for Public Land and was begun with a \$2 million grant from the James Irving Foundation.

Advantages: These types of companies can bring innovative and flexible approaches to brownfields assessment, cleanup, and redevelopment. They offer the opportunity to leverage not only their own environmental expertise and financial resources, but also the public and private resources that they may attract to specific brownfields projects.

Limitations: Land Recycling Companies may be limited by their size to involvement in a small number of pilot-type brownfields projects. State legislation and time may be needed to permit Land recycling Companies to effectively participate in brownfields redevelopment.

Reference for Further Information: The Trust For Public Land, 116 New Montgomery Street, Fourth Floor, San Francisco, CA 84105, Telephone: 415-495-4014, Fax: 415-495-4103, World Wide Web home page -- <http://www.tpl.org/tpl/>.

PROPERTY PARCELIZATION

Description: The “parcelization” of real property that includes a hazardous waste site is a potential solution to an often significant financial problem for the property owner. The remediation of environmentally distressed real properties can be financially facilitated by delisting and selling clean portions of the properties to obtain the financing necessary to remediate the remaining environmentally impacted portions of the properties. Cooperation from the appropriate regulatory agencies is essential and some portions of the clean properties probably will have to be devoted to buffer zones, thereby reducing the market value of the properties (see **Section 9., Brownfields Cleanup Tax Deduction**).

Actual Use: Parcelization is a relatively little utilized financing technique for a variety of reasons, including the practical requirement that the real property in question must be of an appropriate size and configuration that permits its division into two or more economically and legally viable parcels. However, interest in the possibilities of using parcelization with regards to brownfields clean-up and redevelopment has been increasing.

Potential Use: This real estate/financing technique could be applied to any environmentally distressed property situation in which the original parcel is large enough to be divided so that there is a marketable, clean portion which can be sold or leased to help pay for cleaning up the remaining contaminated portion, and an acceptable buffer zone.

Advantages: When parcelization works, the approach solves a major financial problem which otherwise could keep property tied up for a protracted clean-up period and impose a substantial cash flow burden, even in situations where only part of the property is contaminated.

Limitations: The parcelization approach can work only for properties that contain significant portions which are environmentally clean. Local zoning and subdivision ordinances may prevent the division of parcels and/or current property values may be too low to make parcelization a worthwhile alternative.

Reference for Further Information: See “Financing Remediation by Delisting and Selling Clean Portions of Affected Property”, Nestor & Adamowski, *Remediation*, Summer 1995, John Wiley & Sons, 605 3rd Ave., New York, NY 10158-0012, Telephone: 800-825-7750.

QUALIFIED EMPOWERMENT ZONE FACILITY BONDS

Description: Private activity bonds are bonds issued by State or local governments for public purposes. To qualify for tax-exempt status, at least 90 percent of bond proceeds must be used by the State or local government, and no more than 10 percent of the debt service on the bond may be derived from, or secured by, a trade or business. Each State may only issue private activity bonds in amounts whose cumulative value in any year does not exceed \$50 per capita or \$150 million (the volume cap), whichever is greater.

In creating the federal Empowerment Zone/Enterprise Community (EZ/EC) Program, the 1993 Budget Reconciliation Act also created a new category of tax-exempt private activity bonds for use in the designated EZs and ECs, "Qualified EZ Facility Bonds." At least 95 percent of the net proceeds of a Qualified EZ Facility Bond must go to finance property or land in the EZ or EC used by a qualified business in the EZs. The value of such bonds per qualified business may not exceed \$3 million for each EZ/ or EC. Also, total bond financing for each principal user may not exceed \$20 million for all EZs and ECs. Qualified EZ Facility Bonds are subject to State volume caps.

Actual Use: Information on the use of these Qualified EZ Facility Bonds in the eight previously existing urban empowerment zones is not clear. We are checking with the EZs/ECs themselves to update this information and plan to include it in the write-up of this tool on the Internet version of the *Guidebook* as soon as possible.

Potential Use: The federal government could (and plans to do so) name additional communities as EZs and/or ECs and extend eligibility for these bonds to qualified businesses in those locations. The bonds could be used to assist in the purchase, rehabilitation, and redevelopment of brownfields properties and the structures and facilities located on them. Federal law could be changed so that EZ facility bonds do not count against State volume caps, or count against the caps at a reduced rate.

Advantages: Used in combination with other incentives available in EZs and ECs, these facility bonds provide a potentially powerful economic inducement to invest in these areas.

Limitations: EZ facility bonds by definition can only be used in federally designated EZs and ECs, and only by qualified businesses in those locations.

Reference for Further Information: Omnibus Budget and Reconciliation Act of 1993, Public Law 103-66. U.S. Department of Housing and Urban Development (HUD), Office of Community Planning and Development, 451 7th Street, SW, Washington, DC 20203, Telephone: 202-401-1020. U.S. EPA, Environmental Financial Advisory Board (EFAB) report: *Financing Brownfields Redevelopment: Linkages to the Empowerment Zone/Enterprise Community Program*, U.S. EPA, 401 M Street, SW, Washington, DC 20460. Mail Code: 2731R.

REAL ESTATE INVESTMENT TRUSTS

Description: A real estate investment trust (REIT) is a privately or publicly-traded investment corporation (whose shareholders may include either or both retail and institutional investors) that specializes in buying, improving, managing and selling real estate properties. A REIT is essentially a mutual fund that specializes in pooled investments in real estate. Most REITs have a particular real estate investment focus such as residential housing, industrial properties, general commercial properties, shopping centers, etc.

Actual Use: Hundreds of REITs exist across the country providing investment vehicles for billions of dollars in real estate properties located in thousands of communities. They are a major force in the development of apartment housing and shopping centers. REITs as an industry have been in existence for more than thirty years and they are the vehicle for billions of dollars in real estate investments each year (\$6.5 billion in 1992).

Potential Use: REITs focusing on industrial and commercial real estate could begin to include select brownfields properties in their portfolios. New REITs could be established that focus on buying, assessing, cleaning up, redeveloping, and/or selling brownfields properties. They could also be structured to focus investments on real estate properties located in empowerment zones and enterprise communities.

Advantages: REITs are fully integrated companies with professional management and staff that put real estate planning, acquisition, development, management, and sales under one roof. With their investment focus, REITs can assemble a diverse portfolio of real estate properties to spread and reduce financial risks. REIT dividend earnings can be tax-exempt for tax-exempt investors such as pension funds.

Limitations: REITs can be complex to develop and establish and they require skilled management and staff to operate. They traditionally promise fairly high rates of financial returns to participating investors which may be difficult to manage with brownfields properties in their portfolio.

Reference for Further Information: U.S. EPA Region 5 Great Lakes Environmental Finance Center (GLEFC), The Urban Center at Cleveland State University, Economic Development Program, UB- 215, Cleveland, Ohio 44115, Telephone: 216-687-6947, Fax: 216-687-9227, World Wide Web site: <http://www.csuohio.edu/glefc/> Other good sources include National Real Estate Investor and Urban Land magazines, which frequently have articles on REITs.

STATE VOLUNTARY CLEANUP PROGRAMS

Description: State Voluntary Cleanup Programs are structured to address the environmental and financing problems associated with brownfields and other contaminated properties. These programs seek to encourage the cleanup of such sites in a timely manner by eliminating many of the procedural and economic barriers to cleanup and reuse. They provide a variety of incentives for private companies and developers to voluntarily clean up sites. These programs set clear environmental standards and provide protection from future environmental liability. They include oversight, review, and approval mechanisms to ensure that cleanup standards are met. While every program is unique, many contain most or all of the following elements: consolidated permits, land use-based cleanup standards, flexible and clear cleanup procedures, liability release mechanisms, professional certifications, proportional liability provisions, tax incentives, and voluntary agreements.

Actual Use: Since Minnesota set up the first State Voluntary Cleanup Program in April 1988, more than thirty States nationwide have established similar programs. Moreover, the pace at which these programs are being established is accelerating. In the last two years alone, twelve States have set up Voluntary Cleanup Programs. The Environmental Protection Agency (EPA) has developed interim policies for defining its relations with these programs and offers official recognition via memoranda of agreement (MOAs). To date, EPA has signed MOAs with ten States and is negotiating MOAs with eight others.

Potential Use: All fifty States, Puerto Rico, Territories, and Indian Tribes could develop Voluntary Cleanup Programs offering some or all of the features described above to help cleanup and redevelop brownfields and other contaminated properties. In addition, these entities could define their programs' relationships with USEPA through MOAs.

Advantages: These programs offer participants the possibility of considerable savings in terms of time and money. They offer at least partial (sometimes considerable) protection from environmental liability. They make contaminated site cleanup easier and more understandable by standardizing cleanup procedures and streamlining State programs. Lenders may feel more comfortable (may lend money to finance cleanup) with properties processed through a State Voluntary Cleanup Program.

Limitations: EPA does not have to recognize State Voluntary Cleanup Programs and/or honor any liability protection they provide. Some cleanups cost more under these programs than if property owners do it themselves. Once a property owner enters a program, they may not be able to opt out.

Reference for Further Information: U.S. EPA, Office of Solid Waste and Emergency Response, 401 M Street, SW, Washington, DC 20460, Telephone: 202-260-4610, Fax: 202-260-3527. U.S. EPA, Office Enforcement and Compliance Assurance, Ariel Rios Building, 1200 Pennsylvania Avenue, NW, Washington, DC 20044, Telephone: 202-564-2440.

TAX ABATEMENTS

Description: A tax abatement is a temporary moratorium on charging the usual tax rate on a new investment. It may take the form of a full or partial exemption from taxes such as tangible personal property and/or real estate. The exemption will only be in effect for a specific period of time such as five or ten years. The tax abatement granted may be restricted to new development in special designated areas such as empowerment zone/enterprise community, or it may be targeted on a case-by-case basis to particularly desirable individual development. Tax abatements are individually tailored regarding time and scope to allow the State or local government to calculate the exact cost of the tax change, and thus, the exact tax benefit offered as well.

Actual Use: States and communities across the country use various forms of tax abatements to encourage and support economic development. For example, Ohio, New York, and Minneapolis, Minnesota, are currently using tax abatements to attract economic development to specific locations, including brownfields properties.

Potential Use: Many additional communities nationwide could direct the use of this type of tax incentive toward brownfields redevelopment and realize substantial environmental and economic benefits. If more States and communities nationwide used this financial tool in this way, it could become a major force in spurring increased brownfields cleanup and redevelopment.

Advantages: Tax abatements can make otherwise uneconomical projects attractive to property owners, developers, and financial supporters. These abatements can often provide a substantial incentive for all parties to participate in particular projects. If the new development is properly structured and successful, the community tax base will grow at a rate, and to a size, that more than offsets the loss of taxes due to the abatement.

Limitations: Tax abatements detract from the resource base of States and communities. If given when investment would have occurred anyway, they represent the waste of an incentive and an unnecessary loss of resources. The granting of tax abatements only to select projects may raise concerns about equity.

Reference for Further Information: U.S. EPA Environmental Financial Advisory Board (EFAB) report, *Financing Strategies for Brownfields Redevelopment*, March 1996, U.S. EPA, 401 M Street, SW, Washington, DC 20460, Mail Code: 2731, Contact: Timothy McProuty at mcprouty.timothy@epa.gov. See also, Berger, Robert S., Campbell, Patricia, C., Crolle III, James, A, Marsh, Wendy A., et. al., *Recycling Industrial Sites in Erie County: Meeting the Challenge of Brownfield Redevelopment*, Buffalo Environmental Law Journal, Volume 3, 1995.

TAX INCENTIVES

Description: There are three basic types of tax incentives offered by federal, State, and local governments -- exemptions, credits, and deductions. Exemptions provide a release from taxation. Credits provide dollar-for-dollar reductions in taxes owed. Deductions allow certain costs or expenses to be subtracted from income over one (expensing) or more years (depreciation). Governments offer incentives to encourage behavior deemed desirable for economic, social, or other reasons. Incentives help to level the economic playing field between brownfields and greenfields.

Actual Use: A number of States use tax incentives to promote brownfields redevelopment. The Massachusetts Economic Development Incentive Program offers tax benefits to businesses in blighted areas. Benefits provided to eligible projects (including brownfields requiring cleanup) include a 5% State Investment Tax Credit, a 10% Abandoned Building Tax, priority for State capital funding and special municipal tax assessment. Ohio's Brownfield Site Clean-up Tax Credit Program provides franchise or income tax credits for the voluntary cleanup of contaminated sites. The basic tax credit is 10% of eligible costs or \$500,000, whichever is less. In designated areas, the credit is 15% of eligible costs or \$750,000, whichever is less. The credits are only available to companies who have participated in the State Voluntary Action Program and received a "Covenant Not to Sue."

Potential Use: There are a number of other tax incentives being considered by the States and the federal government to promote brownfields redevelopment (see **Section 9., Brownfields Cleanup Tax Deduction** which permits non-responsible parties, including owners and prospective purchasers, to fully expense cleanup costs in the year incurred). This particular proposal provides a potential \$2 billion in incentives over seven years and be targeted to existing and proposed empowerment zones/enterprise communities, Environmental Protection Agency (EPA) brownfields pilots, and areas with high poverty rates. Another proposed incentive is a tax credit equal to 75 % of the costs of cleanups approved by federal or State agencies. Finally, some have proposed making brownfields cleanup activities eligible for tax-exempt industrial bond financing.

Advantages: Tax incentives make it less costly for businesses to undertake brownfields redevelopment activities. They may be combined with other incentives such as liability releases, grants/loans, and insurance to leverage significant private investment. They may also motivate investment by signaling to businesses that the development is desired and will get special attention.

Limitations: Tax incentives represent a direct loss to the resource base of governments. They may be so costly that they can be offered to only a limited number of special areas or projects. If tax incentives are given when not absolutely needed, they can be a significant waste of resources.

Reference for Further Information: Northeast-Midwest Institute 218 D Street, SE, Washington, DC 20003, Telephone: 202-544-5200, Fax: 202-544-0043.

TAX INCREMENT FINANCING

Description: Tax increment financing (TIF) provides for the temporary allocation to carefully defined redevelopment districts the increased tax proceeds in an allocation area generated by increases in assessed property values. TIF utilizes the increased tax revenues stimulated by redevelopment to pay for the capital improvements required to induce the development. In a basic TIF, property assessments are frozen at a pre-development level in the specified area. Bonds are then issued to finance a portion of the redevelopment. As property values and assessments in the area increase, the TIF authority or the city use the increment in tax revenues to meet the debt service on those bonds.

Actual Use: Tax increment financing has been used by local governments nationwide for years for a wide variety of economic development projects. The technique was originally used to raise the local share or match required for urban renewal projects. It is most often used for economic development projects that provide specific, measurable benefits to a select, well defined group of taxpayers. TIF laws are on the books in more than thirty States. The City of Cleveland, Ohio, has used this type of financing in a specifically defined geographic area containing a number of contaminated properties.

Potential Use: Tax increment financing could be used across the nation as one more incentive offered by cities to encourage and support the cleanup and redevelopment of contaminated brownfields properties. TIF also might be used by State and local governments to direct development away from environmentally sensitive areas (see the closely related tool in **Section 8., Tax Increment Financing - CBEP**).

Advantages: Tax increment financing makes development self-financed. TIF is very flexible and very focused. Local control is retained and no debt limitation usually applies. Redevelopment risks are shifted from taxpayers to the bondholders.

Limitations: TIF bonds pose a greater risk to investors and, thus, bear higher interest rates than general obligation bonds. TIFs are complex and require considerable financial, development, engineering, and other expertise.

Reference for Further Information: Baker & Daniels document, *Local Government Funding Sources*, Seventh Edition, July 1995, Baker & Daniels, 300 North Meridian Street, Suite 2700, Indianapolis, IN 46204, Telephone: 317-237-0300. This booklet describes numerous local government funding sources, focusing on Indiana. See also, U.S. EPA Environmental Financial Advisory Board (EFAB) report, *Financing Strategies for Brownfields Redevelopment*, March 1996, U.S. EPA, 401 M Street, SW, Washington, DC 20460, Mail Code: 2731R, Contact: Timothy McProuty at mcprouty.timothy@epa.gov.

TRANSFERABLE DEVELOPMENT RIGHTS

Description: In traditional transferable development rights (TDR) programs, rural property owners are allocated a specified number of TDRs in exchange for agreeing not to develop, or to limit development on their land. These mostly rural property owners are permitted to sell these TDRs to real estate developers, who are then permitted to use them to exceed zoning requirements on properties they own in other more developed areas.

Actual Use: TDRs have been used by local governments to preserve land for agricultural uses, as forests, or as nature preserves. Fauquier County, Virginia, and Montgomery County, Maryland, have long standing TDR programs whose purpose are to preserve land but not to generate revenues. Since the landowners receive all funds related to the purchase of development rights, existing TDR programs are either revenue-neutral or are operated at-cost to local governments.

Potential Use: If local governments took a percentage of each TDR transaction, enough funds might be raised to use for land purchases and development. TDR programs might be adapted to encourage brownfields redevelopment, thus protecting greenfields from development. Under a brownfields TDR system, developers that agree to redevelop brownfields could be given additional zoning credits that let them exceed density or height requirements, or provide some other flexibility. These credits could be used at the brownfields site or on other properties owned by the developer.

TDRs could also be used within the context of a community-based environmental protection program to distribute and direct growth in a designated geographical area such as a watershed. Development could be precluded on strips of land adjoining main waterways and tributaries.

Advantages: Properly structured TDR programs would allow local governments to better control and direct growth. They would enable landowners whose properties will not be developed to receive full value for their land, and permit development to be redirected to already-developed areas.

Limitations: As currently structured, TDR programs are not a revenue-generating mechanism. Even with this incentive, landowners and developers may not want governments dictating what they do with properties that they own and want to sell and/or develop.

Reference for Further Information: *Financing Alternatives for Maryland's Tributary Strategies: Innovative Financing Ideas to Restore the Chesapeake Bay*, Report of the Governor's Blue Ribbon Panel, December 1994; *The Growth Dilemma: The Chesapeake in the 21st Century* (Conference Proceedings), Maryland November 1989. Contains good description of TDR programs and rules of thumb for implementing successful TDR programs.

OTHER

Description:

Actual Use:

Potential Use:

Advantages:

Limitations:

Reference for Further Information:

COMPARISON MATRIX FOR FINANCING BROWNFIELDS REDEVELOPMENT

Criteria/ Brownfields Tool	Actual Use	Revenue Size	Administrative Ease	Equity	Financial Leveraging	Environmental Benefits
Brownfields Clean-up Tax Deduction	Low	Mod.	High	High	Mod.	High
*Clean Land Fund (Revolving Fund)	Low	Mod.	Mod.	Mod.-High	High	High
*Community Development Financial Institutions	Mod.	Mod.	Mod.	High	High	High
*Empowerment Zones/Enterprise Communities	High	High	Mod.	Mod.	High	Mod.
*Environmental Insurance	High	High	Mod.	Low	Mod.-High	Mod.-High
*Environmental Liability Releases/Agreements	High	High	Mod.	Mod.	Mod.-High	Mod.-High
EPA: Brownfields Assessment Demonstration Projects	Mod.	Low-Mod.	Low	Low	Mod.-High	High
EPA: Brownfields Workforce Development	Low	Low	Low	Low	High	High
EPA: SRF Brownfields Loans (Clean Water)	Low	Mod.-High	High	Mod.	High	High

COMPARISON MATRIX continued

Criteria/ Brownfields Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
EPA: Superfund Trust Fund	Mod.	Low- Mod.	Low- Mod.	Low- Mod.	High	High
*Environmental Risk Management (Real Estate)	High	High	Mod.	Low- Mod.	High	High
*Federal Assistance Programs	Mod.	High	Mod.	Mod.	High	High
Industrial Development Funds	Mod.	Mod.	Mod.	Low	Mod.	High
Land Reclamation Banks	Low	Low	Mod.	Mod.	Mod.	High
Land Recycling Companies	Low	Low	Mod.	High	High	High
Property Parcelization	Low	Low	Mod.	Mod.	High	Mod.
*Qualified Empowerment Zone Facility Bonds	Low	Mod.	High	Mod.	High	Mod.
Real Estate Investment Trusts	Low	Mod.	Low - Mod.	Mod.	High	Mod.
*State Voluntary Cleanup Programs	High	Mod.- High	High	Mod.	Mod.	High
*Tax Abatements	Mod.	Mod.	High	Low- Mod.	Mod.	High

COMPARISON MATRIX continued

Criteria/ Brownfields Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
*Tax Incentives	High	High	Mod.	High	High	High
Tax Increment Financing	Low	Mod.	Low- Mod.	Mod.	Mod.	Mod.
Transferable Development Rights	Low	Low	Mod.	Mod.	Low	Low- Mod.

High - High use (over 25 States, many localities); other criteria score high (e.g., specific, easy to use, available, flexible, highly leveraged and almost always results in actual redevelopment)

Mod. - Moderate use (10-25 States, some localities); criteria score in medium range, may not always result in project completion

Low - Low or rare use thus far; one or more major implementation problems exist

*Star indicates best-rated mechanisms

**10. TOOLS TO ACCESS
FINANCING
FOR
SMALL BUSINESSES
AND THE
ENVIRONMENTAL GOODS AND
SERVICES INDUSTRY**

10. TOOLS TO ACCESS FINANCING FOR SMALL BUSINESSES AND THE ENVIRONMENTAL GOODS AND SERVICES INDUSTRY

INTRODUCTION

The United States is the largest producer and consumer of environmental goods and services in the world. The U.S. Government defines the environmental goods and service industry (EGSI) as those environmental technology companies selling specialized goods and services used for pollution prevention, abatement and remediation. For example, EGSI businesses sell goods to water and wastewater treatment facilities such as in pumps, instruments, and treatment chemicals, and services such as engineering construction and environmental monitoring and testing. EGSI companies also produce "green" products, or environmentally friendly alternatives to traditional products such as chlorine, or new production processes such as sludge dewatering or handling facilities. For solid and hazardous waste, EGSI firms sell recycled paper products, and biotechnology products or processes for waste reduction. For air pollution control, they sell product alternatives to dry cleaning solvents or metal finishing, and indoor air pollution reduction equipment. Energy reduction and alternative products for agricultural production also are included in the definition of EGSI technology.

A small business is often described as a business having under 50 employees. In this country, small businesses account for over 90 percent of all businesses but produce a clear minority of goods and services. However, in the past five years, they accounted for most of the growth in the economy.

While large and medium-sized EGSI companies are prospering in this country, small environmental goods and services businesses still present financing challenges. In general, small businesses traditionally are difficult and costly to capitalize adequately because of weak credit considerations, inadequate experience, poor economies of scale, the lack of established markets and other factors, all of which increase the cost of capital. Small EGSI businesses remain relatively small in number, particularly for "green" products compared to specialized services, and small EGSI businesses must compete against much larger engineering and technology companies with market niches, in-house research and development, and years of operating experience, including overseas.

Whether the small EGSI business sector remains fledgling because of a scarcity of capital or inability to access financing or other services is debatable. Some traditional lending institutions such as commercial banks report that even when they offer special programs to lower lending costs or waive other credit requirements to assist small EGSI businesses, the supply of financing appears to exceed the demand. In contrast, others argue that financial and environmental risk factors inhibit the flow of capital to small EGSI businesses. Also included in the definition of the problems of small businesses is their access to EGSI technology and services. For example, a small dry cleaning facility may find it difficult to learn about new wet cleaning processes, and/or may find acquisition of such new technology unaffordable.

This Section of the *Guidebook* has been expanded to a considerable degree in the 1999 revision. The tools presented in the Section continue to include both equity mechanisms such as venture capital, grants and private placements, and debt mechanisms such as loans. A number of non-capital mechanisms/tools such as the use of business plans and networking devices also continue to be presented. However, for the first time, government programs administered by the U.S. Department of Commerce's Small Business Administration and other federal agencies are covered in some depth.

Readers also should note that in addition to the tools presented in this Section, a considerable number of tools presented in other Sections may prove useful to small businesses and the EGSI. For example, many of the types of information exchange tools described in **Section 5: Tools for Delivering Financial Outreach** are very applicable to these businesses. In addition, some of the tools (and/or the concepts they embody) presented in **Section 2: Tools for Acquiring Capital**, **Section 3: Tools for Enhancing Credit**, and **Section 6: Tools for Lowering Costs** may prove helpful to small businesses and the EGSI.

10.A. EQUITY CAPITAL

10. A. EQUITY CAPITAL

Description: Equity capital is investment in a business made by external sources, and generally entails some ownership and/or partnership arrangement. Equity contributions also may be made via special grants or credit enhancements, or in-kind contributions. As contrasted with the financial interest created by borrowing which creates a debt by the business to the lender, equity investments may not result in added financial liability reflected on a firm's balance sheet. Most start-up small EGSI businesses require some equity investment, since 100% debt financing is too risky for most lenders. However, equity investments usually are combined with debt tools in funding packages.

Equity investment is a highly creative, entrepreneurial activity in this country, and in periods of economic growth may account for a high proportion of business growth. Equity investments in small EGSI businesses can come from a variety of sources, including individuals, other companies such as venture capital companies or parent companies, governments, and via the stock exchanges. Non-monetary equity contributions can be made with contributions of land, buildings and equipment, goods and personnel, and the use of a larger company's name, technology, business plan or markets (including franchising and strategic alliances between businesses). A number of management tools such as investment forums and networks, and the use of business plans for marketing purposes are presented.

Advantages: The greater the equity investment in a small business, the less debt that must be incurred. Equity investments can be more flexible than debt structuring, as terms are negotiated on a case-by-case basis. Such investments may leverage additional monies by opening the doors to more traditional credit sources. Small business managers sometimes can benefit greatly from the expertise and personal commitment of equity investors. These investors may allow small businesses to survive short-term solvency problems, unlike debt instruments which must be regularly repaid.

Disadvantages: Equity investors will demand some return on their money, ranging from normal interest, dividends, and profit distributions to a large ownership stake, perhaps even a controlling position, in a company. They may demand repayment in a relatively short time period, for example, from three to five years. Arranging equity investment is difficult and time consuming from the point of view of the small business, particularly since investment terms vary considerably, and outside advice such as attorney fees can be very expensive. Different States have different laws pertaining to partnerships. Many investors, particularly large investors, avoid investing in start-up companies or in high risk situations. Small businesses may lose their sense of ownership or identity if outside equity contributors assume controlling positions or become difficult to handle. The overall economic climate substantially influences the amount and kind of equity investment.

Summary: The equity tools presented here entail considerable initiative on the part of the small or EGSI business, but are widely available. With the exception of government grants, equity investments also are highly expandable and frequently highly leveraged, and result in the kind of entrepreneurial innovation representing the best of the American enterprise.

LIST OF EQUITY TOOLS
(In Alphabetical Order)

- *1. Agriculture: Alternative Agricultural Research and Commercialization Corporation
- *2. Angels (Personal Investors)
- *3. Business Plans
- *4. Commerce: Small Business Administration (SBA) -- Angel Capital Electronic Network
- 5. Commerce: SBA -- Small Business Innovation Research Program
- *6. Commerce: SBA -- Small Business Investment Companies
- 7. Environmental Capital Network
- 8. Environmental Opportunity Funding Corporation
- *9. Franchising
- 10. Investment Forums
- *11. Investment Networks
- *12. Joint Ventures
- *13. Private Placements
- 14. Public Offerings
- *15. Strategic Alliances
- *16. Venture Capital

* Stars indicate most highly rated mechanisms as described in the Comparison Matrix at the end of the narratives. See Introduction to the *Guidebook* for a description of the criteria used. Ratings of “High”, “Moderate”, and “Low” are for comparison purposes only, as some ratings are necessarily subjective and data are incomplete.

**DEPARTMENT OF AGRICULTURE
ALTERNATIVE AGRICULTURAL RESEARCH AND
COMMERCIALIZATION CORPORATION**

Description: The Alternative Agricultural Research and Commercialization (AARC) Corporation is a federal-government-owned corporation which reports to the Secretary of Agriculture and is authorized to receive annual appropriations from Congress. It is a venture capital firm that makes investments in companies to help commercialize environmentally friendly biobased industrial products (non-food and non-feed) made from agricultural and forestry materials and animal by-products. The corporation's investments typically include an equity position and/or a royalty on sales. Preference is given to funding pre-commercialization activities in companies that already have marketable products. Any private individual or company can apply for an investment. Applicant's must demonstrate management, technical, marketing, and financial expertise and are expected to provide at least one-to-one match.

Actual Use: Investments range from \$100,000 to \$ 1 million and the average initial investment in a company has been \$300,000. In its first five years the Corporation invested \$33 million in 70 projects in 33 states, leveraging \$105 million in private funds. Innovations brought to market include kenaf fiber erosion mats, soy-based cleaning products, and biodegradable, seed-based automotive engine and transmission lubricants.

Potential Use: AARC Corporation investments can enable a firm to bring to market innovative, environmentally friendly products which other venture capitalists might not be willing to fund.

Advantages: The 1996 Farm Bill established a federal procurement preference for products produced in partnership with the Corporation. This gives companies receiving AARC Corporation investments and advantage in marketing their products to the federal government.

Limitations: This is not a grant program. It is a source of venture capital investment for which the Corporation expects to receive a premium in return for the risk incurred. The AARC Corporations is a relatively small player in the \$35 billion organized venture capital market.

References for Further Information: Contact Alternative Agricultural Research and Commercialization Corporation, U.S. Department of Agriculture, 0156 South Building, 1400 Independence Avenue, SW, STOP 0401, Washington, D.C. 20250-0401, Telephone: 202- 690-1633, Fax: 202-690-1655, Internet: www.usda.gov/aarc/.

ANGELS (Personal Investors)

Description: An angel is an individual who as a private investor buys into a company usually in its early stages. Many of these adventurous investors are highly paid professionals such as doctors, dentists, lawyers, accountants, etc. Other types of angel investors can include, middle managers, entrepreneurs, associates, friends, and even relatives. While angels include wealthy, sophisticated millionaire investors, the average income of an angel is around \$100,000. Angels are distinguished by the fact that they are investing only their own money, not other people's money. The average angel investment is less than \$50,000.

Actual Use: Angels are the largest source of risk investment capital in the United States. Reliable estimates place the number of investor angels in the country at nearly one million strong. These angels invest over \$27 billion in business ventures each year with about half of that amount going to fund early-stage businesses. Moreover, 90 per cent of this informal venture capital goes to financing of less than \$1 million and 82 per cent to financing under \$500,000. Angel investors review more than two million proposals for capital a year and fund about 20 per cent. Thus, they provide financing to 400,000 small businesses a year.

Potential Use: For small businesses and environmental firms, investor angels represent the greatest single source of capital. They are ideal for start-up companies who are too new to qualify for bank loans, expanding companies with growth potential who are too small to attract traditional venture capital, and companies needing only a small amount of money.

Advantages: More than 85 per cent of angel investors do not seek voting control of the businesses that they finance. Angels are willing to make small investments. As a group, angels invest 60 per cent of their money in start-up businesses. They also often invest in other types of risky business deals. Angel investors are local, numerous, and they are everywhere.

Limitations: It is difficult to raise more than \$500,000 from angel investors. Angels are expensive, often wanting a return on their money ranging from 20 to 40 per cent. Alternatively, they may demand 10 to 30 per cent or more of the company. Further, angels expect to get their investment back relatively quickly (four years). Most invest only in companies that are physically located within 50 miles of where they live or work.

Reference for Further Information: Blechman, Bruce Jan, and Levinson, Jay Conrad, *Guerrilla Financing: Alternative Techniques to Finance Any Business*, Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts 02108, November 1991.

BUSINESS PLANS

Description: A business plan is a detailed, written description that outlines what the company's activities, goals, progress to date, plans for growth, and financial projections. The plan is both a strategic and an operating document. It should include a detailed blueprint for action to which the enterprise's management team has voluntarily committed. The business plan is the most important document that a company will ever produce as a means to obtain financing. Every potential equity investor will want to see a detailed business plan which informs them as to what management intends to do with its monetary and human resources. The plan may include information on what the company seeks from investors and what it is willing to give, what the potential returns are for investors, and who management is and why they are the right people to run the company.

Actual Use: Business plans are used by almost every firm, large or small, in the private sector, and in larger non-profit agencies. Their use is expanding to the public sector. Some local government privatization or contracting-out initiatives resulted from the development of formal or informal business plans. These documents identified the "business" of the organization as the provision of a high quality environmental service, and that the responsibility of the operations side of the business was to implement this in the most effective and cost-efficient manner, which does not in all cases require public employees to deliver the service. Business plan software also is widely available.

Potential Use: Business plans can be used by any organization as a means to identify and integrate its operations around its core services or products. Recently, business plans have been suggested as a way for smaller and medium-size environmental and other utilities to bolster their financial, managerial and technical capacities to deliver services. Business plans can also be used by governments to spur the optimal in-house provision of environmental and other services.

Advantages: The business plan requires the managers and/or operational staff to identify the "business" they are engaged in, and to articulate the directions in which they wish to proceed. It encourages managers and employees to think in a more efficient, cost-effective and strategic manner by placing day-to-day operational functions in the context of a detailed plan based on carefully defined goals and objectives.

Limitations: Requires the analytic, financial, personal, and time commitments of management and staff to honestly examine the business (products and/or services provided), develop the detailed business plan, and then implement it.

Reference for Further Information: Brandt, Steven C., *Guide for Preparing a Business Plan*, Gainer & Associates, 863 H Street, Suite A, Arcata, California 95521, Telephone: 707-822-4448, Fax: 707-822-4457. A good example of software is BizPlan Builder, JIAN 1996, 1975 W. El Camino Real, Mountain View, CA 94040, <http://www.jian.com/>.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
ANGEL CAPITAL ELECTRONIC NETWORK**

Description: The Angel Capital Electronic Network (ACE-Net) is a nationwide Internet-based listing service that provides information to accredited investors on small businesses seeking \$250,000 to \$5 million in equity financing. Sponsored by the Small Business Administration's (SBA's) Office of Advocacy, ACE-Net requires companies seeking capital to submit a completed Small Corporate Offering Registration (SCOR) Form U-7 and pay an annual \$450 subscription fee. Entrepreneurs first must complete and sign an entrepreneur enrollment form and send it to the nearest Network Operator, who will then issue a password to allow online completion of required forms. Entrepreneurs must be prepared to provide detailed business plans and financial statements to potential private investors. Investors also must complete an investor subscription form and mail it to the nearest Network Operator. The system is designed for companies to use the Accredited Investor Exemption for offerings under Regulation A or Regulation D (Rule 504). Accredited investors must have a net worth of \$1,000,000 or have an annual income of more than \$200,00.

Actual Use: ACE-Net was announced in October 1996.

Potential Use: Firms in a position to raise funds under Regulation A or Rule 504 might use ACE-Net as a method for contacting potential investors. ACE-Net is planned to become a private, independent, not-for-profit organization.

Advantages: ACE-Net offers a formalized method for small, entrepreneurial firms to contact potential investors. It operates on a secure server meant to safeguard confidential information from unauthorized access.

Limitations: Internet access is required. Postings of SCOR forms on ACE-Net are securities offerings and entrepreneurs should consult with a securities attorney regarding possible requirements to make certain filings with the SEC prior to listing on ACE-Net. Legal and other costs probably make it impractical for companies to seek less than \$250,000.

Reference for Further Information: Consult a securities law practitioner. Contact ACE-Net on the Internet at: <http://www.sba.gov/advo/acenet.html>. Contact the U.S. Department of Commerce, Small Business Administration, Office of Advocacy, 409 Third Street, SW, Washington, D.C. 20416, Phone: 202-205-652, Fax: 202-205-6928, Internet: www.sbaonline.sba.gov/ADVO.

DEPARTMENT OF COMMERCE
SBA SMALL BUSINESS INNOVATION RESEARCH PROGRAM

Description: The Small Business Administration (SBA) Small Business Innovation Research (SBIR) Program is a highly competitive federal award system. It seeks to stimulate technological innovations in the private sector, strengthen the role of small business in meeting federal research and development needs, increase private commercialization of innovations derived from federally supported research and development efforts, and foster participation in technology innovation by women-owned and socially and economically disadvantaged small business firms. It has three phases, the first two of which involve contract or grant funding agreements between participating federal agencies (listed below) and qualified small businesses. A qualified small business is a for-profit firm which, including its affiliates, has no more than 500 employees, is independently owned and operated, and is at least 51% owned by U.S. citizens or permanent resident aliens. Phase I funding is up to \$100,000 for up to six months, to conduct a feasibility study to evaluate scientific and technical merit of an idea. Phase II funding is up to \$750,000 for up to two years, to expand on the results of, and further pursue development of, Phase I. Phase III relies on other federal or private funds to support the commercialization of Phase III results. SBA's Commercialization Matching System helps SBIR awardees locate funding sources needed to bring their innovations to market.

Actual Use: Technical abstracts of previously funded Phase I and II projects are available from agencies, including some on Internet sites.

Potential Use: The program could help firms in the environmental goods and services industry.

Advantages: Phase I and II funds are grants. However, commitment of private funds for Phase III increases the likelihood of Phase II funding.

Limitations: The program is extremely competitive. Some agencies offer less funding than others (e.g., USDA offered \$65,000 for Phase I in fiscal 1998).

Reference for Further Information: SBA, Office of Technology (for federal-government-wide SBIR program information and tips on proposal preparation), Telephone: 202-205-6450. Federal contacts include Department of Agriculture, Telephone: 202-401-4002, Fax: 202-401-6070; Department of Commerce, Telephone: 301-713-0829; Department of Defense, Telephone: 800-382-4634, Fax: 800-462-4128; Department of Education, Telephone: 202-219-2004; Department of Energy, Telephone: 301-903-1414; Department of Health and Human Services, Telephone: 202-206-9385, Fax: 301-206-9722; Department of Transportation, Telephone: 617-494-2051; Environmental Protection Agency, Telephone: 800-490-9194, Fax: 202-565-2447; National Science Foundation, Telephone: 703-306-1390, Fax: 703-306-0298; National Aeronautics and Space Administration, Telephone: 703-281-1745 or 301-918-1980.

DEPARTMENT OF COMMERCE
SBA SMALL BUSINESS INVESTMENT COMPANIES

Description: Small Business Investment Companies (SBICs) are privately organized and privately managed investment firms licensed by the Small Business Administration (SBA). Using private capital and capital borrowed at favorable rates via the federal government, SBICs channel monies to small, fast-growing companies, both new and established. They provide equity capital, long-term loans, and expert management assistance to qualifying businesses. As profit-motivated entities, SBICs expect to share in the success of the small businesses in which they invest. There are two types of SBICs, regular SBICs and Specialized Small Business Investment Companies (SSBICs). SSBICs are targeted to the needs of socially or economically disadvantaged entrepreneurs.

Actual Use: SBA requires a minimum private capital investment of \$5 million from an SBIC or SSBIC, and a \$10 million investment if they intend to utilize participating securities. An SBIC or an SSBIC in good standing may receive leverage equal to 300 percent of its paid in private capital. To obtain leverage, SBICs issue market rate debentures which are guaranteed by the SBA. There are 271 SBICs nationwide with \$3.5 billion in private funding and \$1 billion in federal monies to invest or lend. Some SBICs are general-purpose in nature, while other focus on specific industries, geographic areas, or types of borrowers. Some industries sponsor SBICs to encourage innovation. SSBICs focus on women, minorities, and other socially or economically disadvantaged groups.

Potential Use: An SBIC could be formed for the express purpose of providing capital to small businesses in the environmental goods and services industry, and/or to specific sub-segments of that industry. The SBIC could focus its investment on start-up companies and/or on promoting environmental technology innovation.

Advantages: SBIC funds can open the door to other more traditional financing such as lines of credit. SSBICs support businesses that cannot qualify for investments from regular SBICs and venture capitalists. SBICs benefit from government leverage and enjoy certain tax advantages. SBICs specialize in small business financing and have considerable experience/expertise in that area. SBIC may make investments or loans in cooperation with other public or private parties.

Limitations: SBIC funds have more requirements and involve government officials. SBICs may have limited monies to invest and not be able to help in future financings. They are restricted in the kinds of real estate investments they can make, and may invest no more than one-third of their portfolios in real estate. SBICs may not invest in businesses whose main activity involves relending or reinvesting.

Reference for Further Information: U.S. Small Business Administration, 409 3rd Street, SW, Washington, DC 20416, Telephone: 202-205-6600.

ENVIRONMENTAL CAPITAL NETWORK

Description: The Environmental Capital Network (ECN) is a project of the Center for Environmental Policy, Economics and Science, a 501 (3) not-for-profit, tax-exempt corporation. The ECN offers services to bring together environmental companies and investors. Its goal is to help individual, professional, corporate and institutional investors access early-stage and expansion companies commercializing environmental and “green” technologies, products and services, thereby aiding such companies in more efficiently and effectively raising capital. Its Services include a monthly Investor’s Bulletin, periodic Capital Forums, a Business Plan Review program, and an Environmental Business Capital Access Site (EBCAS) Internet site in conjunction with the Angel Capital Electronic Network (ACE-Net) (see **Section 10.A., Angel Capital Electronic Network**).

The Investors’ Bulletin, mailed to registered investors, provides key information about companies seeking capital. Companies must complete a questionnaire and sign an application and pay a \$350 fee for three distributions of the company profile in the bulletin over twelve months. The Capital Forums periodically give entrepreneurs a direct audience with potential investors for a registration fee of \$245. The Business Plan Review program requires three copies of the company’s business plan and a \$500 fee. The business plan is reviewed by two independent, knowledgeable investors and its marketing/sales section is analyzed by an independent business development center. The Environmental Protection Agency’s (EPA’s) Office of Pollution Prevention and Toxics helps pay for this service. The EBCAS will provide a gateway to the ACE-Net service for environmental and energy technology companies and investors. EBCAS is supported by an EPA grant and is a joint venture with the Michigan Energy and Resource Research Association, a regional network operator for ACE-Net.

Actual Use: This is a relatively new effort to use the Internet to facilitate contacts between potential investors and entrepreneurial environmental companies.

Potential Use: If it attracts enough favorable attention from investors, ECN could be extremely valuable to both entrepreneurs and venture investors.

Advantages: The partial funding by EPA cuts the cost to companies for the business plan review.

Limitations: Internet access is needed. ECN is not registered as an investment advisor or securities broker-dealer with the federal Securities and Exchange Commission. But, it is registered as an investment advisor conducting business as a finder pursuant to the Michigan Uniform Securities Act.

Reference for Further Information: Environmental Capital Network, 416 Longshore Drive, Ann Arbor, MI 48105, Telephone: 734-996-8387, Fax: 734-996-8732, E-mail: mccabe@recycle.com, Internet: <http://bizserve.com/environmental.capital.network/>.

ENVIRONMENTAL OPPORTUNITY FUNDING CORPORATION

Description: The Environmental Opportunity Funding Corporation (EOFC) is a flexible funding mechanism designed to broker capital packages for environmental businesses and environmental projects, both public and private, where capital is not otherwise available from conventional sources. The EOFC will be primarily used by the Environmental Protection Agency-funded Environmental Finance Centers (EFCs) to help package and meet the capital requirements of their small business clients (see the individual pages for the EFCs in **Section 5.A.: Institutional Arrangements**). The EOFC will charge fees for its services and after an initial injection of public/private donated capital resources will become self-sufficient within a reasonable period of time.

Actual Use: The Environmental Opportunity Funding Corporation is in the planning and developmental stage, and as such, is not currently operational.

Potential Use: The EOFC will be established by an EFC or a group of EFCs as a non-profit 501(c)(3) corporation under the laws of a State, probably in California. The EOFC will function nationwide and locate an office or offices only as needed to provide prompt and efficient services to its clients. For example, it could use the offices of individual EFCs on an as needed basis. The Corporation's main tools will be indirect financial incentives such as loan guarantees, surety bond guarantees, letters of credit, interest rate increments, or subsidies. These incentives will help to provide the inducements needed to motivate private capital investments. The EOFC will help develop financial packages that provide flexibility to the recipient businesses and reasonable rates of return to investors.

Advantages: The Environmental Opportunity Funding Corporation will focus its efforts on small businesses in the environmental goods and services industry. Its brokering efforts and financing assistance will be highly leveraged, using secondary financing mechanisms such as credit guarantees to attract private capital. The EOFC will operate nationwide in a flexible manner with exceptionally low overhead costs.

Limitations: The EOFC is not yet operational and is still exploring ways to raise the needed start-up capital. Until the EOFC is fully operational and earning fees for its services, it will be limited in the amount of assistance it can provide to small environmental businesses.

Reference for Further Information: USEPA Region 9 Environmental Finance Center, Urban Environmental Research and Education Center, California State University at Hayward, Building 7, Alameda Point, 851 West Midway Avenue, Alameda, California 94501, Telephone 510-749-6867, Fax: 510-749-6862, Internet/World Wide Web: <http://www.greenstart.org/efc9>.

FRANCHISING

Description: Franchising is a partnership where one party, the franchiser, grants a second party, the franchisee, the right to use the franchiser's trade name, trademark, or advertising to market/distribute the franchiser's goods and/or services in a particular territory. The franchiser usually provides expertise on a proven business plan to the franchisee through training and ongoing support. The franchisee may prescribe a marketing plan or allow the franchisee to participate in group distribution. The franchisee pays the franchiser for the right to become and remain a distributor or dealer. This may involve an up front cash payment, as well as payment(s) above and beyond the wholesale price of inventory or goods. Besides money, the franchisee brings to the partnership an owner's motivation to make the business a success.

Actual Use: Franchising comprised over \$800 billion dollars in sales in 1992 and this figure is projected to reach \$1 trillion by the year 2000 (International Franchise Association figures). More than 40% of all retail sales are generated by franchise companies and one out of every twelve businesses is a franchise. Perhaps, the most famous franchise in the world is MacDonald's, but there are many others in all fields of business, including environmentally-related ones. For example, Environmental Air Services is a franchise firm that seeks to reduce the contamination in air distribution systems. The firm was started in 1992 and has thirty franchised units and one company-owned unit. Roto-Rooter Corporation, the well-known plumbing and drain care services firm, is a franchise operation with over 600 locations worldwide.

Potential Use: Franchising could be used to help provide any kind of service or product that can be marketed and sold in a wide number of locations based on a standardized plan of operations. The concept can be applied to almost any category of business from water leak detection services to marketing environmentally-friendly hair care and other personal products.

Advantages: Franchising permits entrepreneurs to participate in a proven business using the business' already-recognized name and already developed business and marketing plans. It leverages the franchiser's expertise with the franchisee's money and hard work.

Limitations: The franchiser must come up with the money to buy the franchise and then generate enough revenues to pay any continuing fees. The business concept may not be equally applicable in all areas. The franchisee must carefully investigate the franchiser and its business concept.

Reference for Further Information: International Franchise Association, 1350 New York Avenue, NW, Suite 900, Washington, DC 20005, Telephone: 202-628-8000, Fax: 202-628-0812, World Wide Web site: <http://www.franchise.org/>.

INVESTMENT FORUMS

Description: Investment forums are special events designed to bring businesses together with investors, economic development officials, and investment intermediaries (underwriters, venture investment bankers, finance consultants, financial planners, loan brokers, venture clubs, etc.) for their mutual benefit. These forums are typically annual events in which selected businesses make presentations to a group of investors and investment intermediaries. Forum organizers also arrange networking opportunities for the businesses and investors during these one to three day events. Finally, organizers provide keynote speakers who discuss issues of interest to the private investors.

Actual Use: Annual investment forums may select high growth companies likely to appeal to venture capitalists, corporate investors, and sophisticated individual investor angels (see **Section 10.A., Angels**). These forums usually serve a State or region. Examples of investor forums with an environmental focus include the Northeast Recycling Forum in Brattleboro, VT; the Southeast Recycling Investment Forum in Columbia, SC; and the Midwest Recycling Forum in Lincoln, NE. The first National Environmental Capital Forum took place in New York City, NY. Privatization forums are numerous, however, most investment forums are more generic events looking to aid many types of businesses, including small businesses.

Potential Use: Investment forums could be held that focus on small businesses in the environmental goods and services industry (EGSI). They might even be narrowly focused on an EGSI sub-sector such as firms working on biotechnology approaches to environmental remediation. There may be a largely untapped market of undetermined size in this regard. The geographic range of businesses invited to forums could be broadened to improve investment opportunities to better attract investors.

Advantages: These forums can be efficient and cost-effective ways to bring fast-growing, undercapitalized, small businesses together with equity capital investors and supporting financial intermediaries. Investment forums can heighten investor and financial institution interest in a particular group of firms and industry by educating them on the variety of investment opportunities. They also educate businesses about investor priorities and highlight barriers to business expansion.

Limitations: Investment forums bring limited number of businesses (10-40) and potential investors together at a time. The forums provide no financial assistance to attending businesses and do not participate in business-investor discussions or negotiations once contacts have been made. Many are limited in the geographic scope from which they draw businesses and investors.

Reference for Further Information: U.S. EPA Publication-30-R-96-012, *A Financing Guide for Recycling Businesses: Investment Forums, Meetings and Networks*, September 1996. U.S. EPA, Office of Solid Waste and Emergency Response, Municipal and Industrial Solid Waste Division, 2805 Crystal Drive, Arlington, Virginia 22202, Telephone: 703-308-8254, Fax: 703-308-8686.

INVESTMENT NETWORKS

Description: Investment Networks are for-profit or non-profit business services that match the interest of investors with companies seeking capital. These networks operate very much like a computer dating service (which is in fact what they are for firms and investors). The match-making processes used by these services usually have four steps:

- 1.) Companies submit business summary information, financial projections, and business profile applications. At the same time, investors submit investment preference profiles. Both companies and investors pay a fee to be listed on the network(s).
- 2.) The data from both parties are entered in a computer database, interest matches made, and investors sent summary business profiles of companies that meet their stated investment requirements. At this point in the dating process, investor and company names are held confidential by the network.
- 3.) Investors review company profiles and contact the networks to indicate whether or not they are interested in meeting with any of the companies. If investors indicate interest in meeting, the Investment Network provides both parties with information on how to contact each other.
- 4.) Once introductions have been made between investors and companies, both parties can begin investment discussions. From this point on, it is up to them where the negotiations go.

Actual Use: There are a growing number of Investment Networks around the nation. Most are State or regional in scope, but at least five are national in scope: the Technology Capital Network (MIT) in Cambridge, MA; the Seed Capital Network in Knoxville, TN; the Investor's Circle in Chicago, IL; the Capital Network in Austin, TX; and the Environmental Capital Network in Ann Arbor, MI.

Potential Use: There appears to be room for more regional Environmental Investment Networks. Specialized ones could be formed for specific types of environmental businesses such as recycling companies, pollution prevention enterprises, and environmental remediation technologies firms.

Advantages: Investment Networks provide an easy, structured way for new investors to enter the venture capital markets. They also provide a confidential way for companies and investors to efficiently broaden their range of business contacts. Participating in them can help business owners learn how to improve their companies and their presentations to attract investment capital.

Limitations: Investment Networks do not provide financial assistance themselves and usually do not provide any consulting assistance. They have no role in the actual business negotiations.

Reference for Further Information: U.S. EPA Publication-30-R-96-012, *A Financing Guide for Recycling Businesses: Investment Forums, Meetings and Networks*, September 1996. U.S. EPA, Office of Solid Waste and Emergency Response, Municipal and Industrial Solid Waste Division, 2805 Crystal Drive, Arlington, Virginia 22202, Telephone: 703-308-8254, Fax: 703-308-8686.

JOINT VENTURES

Description: A joint venture differs from either a corporate venture investment or a strategic alliance, although all three are known as corporate venturing. It is a separate legal organization (corporation or partnership), often with a separate management team, while a strategic alliance is a collaboration that typically uses a research contract and marketing or licensing agreements, rather than equity or debt transactions (see **Section 10.A., Strategic Alliances**). A joint venture that has a speculative purpose in addition to an expectation of profits is sometimes called a “joint adventure”.

In a joint venture, a partnership is established to take advantage of tax deductions for the partnership losses, then, after the research and development efforts are completed, the organization is switched to a corporate form. There may be collateral restraints such as agreements between the parties to limit competition between themselves in certain areas. The joint venture agreement should include provisions governing termination, withdrawal, and buyout procedures. Some common termination procedures include a put, which requires one venture partner to purchase the interest of the other, a call, which requires one partner to sell its interest to the other, liquidation, which is an option simply to dissolve the venture, an offer to buy or sell, or a right of first refusal. Under a research contract, a company performs research for the sponsoring corporation for cash. However, there is an issue of ownership of rights to the technology developed. Unless it receives exclusive rights, the sponsor may demand stock warrants as an equity kicker.

Under a marketing or licensing agreement, a company gets an up-front payment or a future payment stream in return for giving an exclusive or nonexclusive right to another firm to produce or sell the former's product as the latter's own.

Actual Use: Joint ventures are a relatively common “off-balance-sheet” financing technique among firms seeking to bring new products to market.

Potential Use: A joint venture can offer a small firm an opportunity to bring an environmentally friendly technology or products to market.

Advantages: A rapidly growing company with limited resources can use a joint venture with a larger corporate partner to exploit its technology in an identifiable market.

Limitations: An ill-designed joint venture can be financially disastrous.

Reference for Further Information: Consult an attorney on applicable State and federal laws. Contact the U.S. Department of Commerce, Small Business Administration at 800-827-5722 for referral to the nearest Small Business Development Center, to ask general questions about joint venture techniques.

PRIVATE PLACEMENTS

Description: A private placement is the sale of a limited number of shares of stock in a company directly to a relatively small number of pre-selected buyers, often institutional investors. While private placements are exempt from most of the procedural hurdles that apply to major public offerings, they still fall under Regulation D of the Securities and Exchange Act of 1933. These regulations limit the number and type of investors who can participate in a private placement (usually 35). The most common type of private placement is the limited partnership. A typical limited partnership involves one general partner who holds full authority for all business decisions and a number of limited partners who serve as angel investors (see **Section 10.A., Angels**).

Actual Use: Private placements are used by new companies that must raise a significant amounts of money, but are not likely to attract a single investor to come up with the entire amount. They are also used by established businesses that need money but do not want to expose themselves to the scrutiny, expense, and/or other difficulties of a public offering.

Potential Use: Private placements could be used very successfully by small and environmental businesses nationwide. They offer the real opportunity for firms such as these to raise substantial investment capital with a moderate level of difficulty. There is significant room for growth in the use of this financial instrument.

Advantages: Private placements require much less paperwork and they are faster, easier, and less costly to complete than public offerings. They do not require a business to distribute substantial profits to a large number of investors. They access capital from a number of investors with very limited ownership interests. Private placements are normally very effective in raising anywhere from \$100,000 to \$1,000,000, and sometimes even more.

Limitations: Successful private placements require a very good business plan. They also require that the entrepreneur be a very good salesperson for their business. Private placements fall under both federal Securities and Exchange Commission regulations and State laws (which vary significantly from State to State). They may require a good attorney and an experienced business plan consultant.

Reference for Further Information: Blechman, Bruce Jan, and Levinson, Jay Conrad, *Guerrilla Financing: Alternative Techniques to Finance Any Business*, Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts 02108, November 1991. There are numerous sources on the World Wide Web for information on private placements and capital investments. Log on and use one of the generic search engines such as *Lycos*, *Infoseek*, *Yahoo!*, *Excite*, etc. to locate sites under these and related terms.

PUBLIC OFFERINGS

Description: A public offering (PO) is the selling of a company's shares to the public in the form of stock. It requires registration with the Securities and Exchange Commission (SEC) and with State regulators. The first time a company sells shares to the public is known as an initial public offering or IPO. Small Corporate Offering Registrations allow smaller companies to raise less than \$5 million with fewer regulations.

Actual Use: A few successful IPOs have been completed with companies that focus on environmentally-related technologies. The companies involved in these IPOs include Shaman Pharmaceuticals, Molten Metals, and Recycling of America.

Potential Use: Most environmental firms are growing only as fast as their own capital, venture capital, or bank loans will allow. Public offerings of environmental firms represents an area with enormous growth potential over the next twenty years as more environmental industries and technologies are created and introduced worldwide. Small Corporate Offering Registrations offer the most potential for raising money for small businesses through public offerings.

Advantages: Public Offerings are a good way for companies with well-established records of successful performance to raise a lot of money to invest in product development, marketing and business expansion. Through these offerings, companies normally raise at least \$5 million, often raise tens of millions, and can sometimes raise in the hundreds of millions of dollars.

Limitations: Public Offerings open up the internal company operations to intense, ongoing scrutiny from the SEC and State regulators (as well as to regulation), the financing community, the media, and the general public. These offerings can be time-consuming, expensive, and distract management attention from running the business enterprise. They usually require outside professional expertise in the form of investment bankers, a top-notch accounting firm, and a good securities attorney.

Reference for Further Information: Securities and Exchange Commission, 455 5th Street, NW, Washington, DC 20549, Telephone: 202-942-4150. The Small Corporate Offering Registration Network (**Scor-Net**) offers information on SEC regulations and venture capital, as well as links to attorneys, brokers, and investors. Scor-Net is located on the World Wide Web at <http://www.scor-net.com/>. The Venture Capital Resource Library has information on the addresses of State regulators, the offices of the SEC, and securities law. It is located on the World Wide Web at <http://www.vfinance.com/>.

STRATEGIC ALLIANCES

Description: A strategic alliance is a partnership or agreement with another company who shares common goals to undertake business activities together for mutual benefit. There may be some exchange of equity in these corporate partnerships but both companies continue to operate as independent entities. Strategic alliances are typically used in research contracts, marketing and licensing agreements, but they can also be used for financing, product distribution or many other business activities. The strategic ally or partner may share the same market, but provide a related product or service. They may have excess demand or need the first company's help in serving their client base. A strategic partner may provide financing in some situations. This financing can be structured as an investment, a loan, prepayment for work to be performed, or as an exchange or sharing of resources such as space, personnel, and equipment.

Actual Use: More and more small businesses are forming strategic alliances with larger companies to get their products or services to the market faster. Larger companies are increasingly investing in innovative small businesses, or sharing resources and facilities, in return for a piece of the smaller firm. This investment approach has been, and remains, particularly popular in many high technology industries such as electronics, computer software design, pharmaceuticals, and bioremediation technology.

Potential Use: Over the next ten to twenty years, there should be very good and increasing opportunities for high technology, environmental businesses to find and pursue corporate alliances, if they so desire. Prospects for corporate alliances should also be good for any small business with products or specialized personnel that larger firms want.

Advantages: Strategic partnerships can allow companies to enter markets, grow stronger, and expand much faster than they could on their own. It can be much less risky to use a corporate partner to help finance a business as such partners often do not insist on control, but rather accept some business service in exchange.

Limitations: Corporate alliances must be mutually beneficial and the partners must share common goals. Corporate partners must carefully screened each other, or there is the real risk that one may be able to economically damage or take over the other. Good corporate partnerships depend to a great degree on mutual trust.

Reference for Further Information: Blechman, Bruce Jan, and Levinson, Jay Conrad, *Guerrilla Financing: Alternative Techniques to Finance Any Business*, Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts 02108, November 1991.

VENTURE CAPITAL

Description: Venture capital is any money invested in business enterprises, particularly at early stages. Traditional venture capitalists are individual investors or groups (partnerships) who provide equity financing to under-capitalized businesses. Venture capitalists also may provide expert business and strategic advice and support. In return for financing or other assistance, the venture capital firm usually receives an equity or ownership stake in the company. Some may become active owners, while others may take stock or stock options assuming more of a lender profile, allowing the original owner to run the company provided a certain level of financial performance is achieved.

Actual Use: There are fewer than 1,000 traditional venture capital firms in the United States. These companies fund about 2,000 businesses each year investing \$3 billion of the \$30 billion in total annual venture capital. Start-up businesses represent around 15% of their total investments, or fewer than 250 businesses. Traditional venture capital firms require applicants to have a detailed business plans, and may also require extensive additional information about the concern and its principals. Traditional venture capitalists are highly selective. There are a limited number of green venture capital firms. For example, the Environmental R&D Capital Corporation was begun in 1994 to invest in emerging growth opportunities in and related to the environmental industry. Pauley Financial invests in environmental and high technology companies. A larger number of other firms such as Hambrecht & Quist and Ventures West include environmental businesses as one of a number of investment specialities.

Potential Use: Traditional venture capitalists will be interested in any small and/or environmental business with a potentially valuable idea, product and/or service that has a good business plan and the management skills to successfully implement it. There is room for growth in the number of green venture capital firms or venture capital firms with environmental investments as a speciality.

Advantages: Most venture capital firms can provide a quick answer to a business seeking financing assistance. Such companies can provide substantial financial assistance, usually exceeding \$500,000.

Limitations: Traditional venture capital companies invest mainly in businesses with extremely high growth potential offering the opportunity for substantial investment returns within 3-5 years. Venture capitalists may demand large ownership stakes in return for risking their capital on new or unproven products or owners. They rarely invest in a service business as profit margins are too low.

Reference for Further Information: Blechman, Bruce Jan, and Levinson, Jay Conrad, *Guerilla Financing: Alternative Techniques to Finance Any Business*, Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts 02108, November 1991. See also *Guerilla Selling and Guerilla Marketing*, Levinson et. al., 1992 and 1993.

OTHER

Description:

Actual Use:

Potential Use:

Advantages:

Limitations:

Reference for Further Information:

**COMPARISON MATRIX FOR SMALL BUSINESS/EGSI -
EQUITY CAPITAL**

Criteria/ Equity Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
*Agriculture: Alternative Agricul- tural Research and Commercialization Corporation	High	Mod. - High	Mod.	Mod.	High	High
*Angels (Personal Investors)	High	High	Mod.	Mod. - High	Mod.	High
*Business Plans	High	High	Mod. - High	High	High	Mod.
*Commerce: SBA Angel Capital Electronic Network	Mod.	Low	Mod.	High	High	High
Commerce: SBA Small Business Innovation Research Program	Mod.	Mod.	Mod.	High	High	High
*Commerce: SBA Small Business Investment Companies	High	High	Mod.	High	High	High
Environmental Capital Network	Low	Low	High	Mod.	High	Mod.
Environmental Opportunity Funding Corporation	N.A.	Low	Mod.	Mod.	Mod.	Mod.

COMPARISON MATRIX continued

Criteria/ Equity Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefit
*Franchising	High	High	Mod.	Mod.	High	High
Investment Forums	Mod.	Low	High	Low- Mod.	Low	Low-Mod.
*Investment Networks	High	High	High	High	Low	Mod.- High
*Joint Ventures	High	Mod.- High	Low- Mod.	Mod.	High	High
*Private Placements	High	High	Mod.	Mod.	High	High
Public Offerings	High	High	Low	Low	High	High
*Strategic Alliances	High	High	High	Low- Mod.	High	High
*Venture Capital	High	High	High	Mod.	High	Mod.- High

High - Used by a majority of small businesses; other criteria score high (e.g., investors willing to incur risk or lend expertise; relatively simple and flexible, available at reasonable interest costs; highly leveraged and influences success/stability of business)

Mod.- Used by many small businesses; other criteria score in medium range

Low - Low or rare use so far; risk-adverse, complicated, and expensive; one or more major implementation problems exist

*Star indicates best rated mechanisms

10.B. DEBT

10.B. DEBT

Description: Debt financing for small business and the Environmental Goods and Services Industry (EGSI) includes loans, notes, lines of credit, bonds, leases, and various credit enhancements. Debt financing is the most traditional method of financing, but is less creative and flexible than equity financing. Under debt arrangements, the lender or creditor acquires a prior claim to the income, earnings or assets of the borrower for interest and principal repayment, which must be paid before equity investors/owners are repaid. Borrowing may be short- or long-term, secured or unsecured.

Advantages: Debt financing may be a relatively low cost in times of low interest rates and for established, credit-worthy customers. Moreover, many interest costs are deductible from taxable income. Debt financing also entails no dilution of equity in the business, since creditors are entitled only to the rate of interest specified and repayment of principal when due. Likewise, creditors have no voice in the conduct of the business, except to the extent that restrictive provisions might be included, for example, in bond covenants. Some forms of debt financing may be more readily available than equity financing, since major institutional investors such as banks and life insurance companies invest only or mainly in bonds and notes and, in good economic times, represent stable and "rich" sources of funding.

Disadvantages: The disadvantages of debt financing are that the quantity and quality of institutional lending is influenced by swings in general economic conditions. Debt financing also is much less predictable and more costly as a source of funding for small, start-up businesses than for larger, established corporations. Interest on debt is a fixed charge that must be paid even when earnings decline. If a business suffers an operating deficit, its loss will be increased by the need to pay interest and these losses also will offset any advantages to interest deductibility from taxes. Fixed interest charges limit managerial discretion in formulating business policies, and in difficult economic times the need to maintain interest payments may lead to a decline in business investment in operations and maintenance and strategic initiatives. There is always the threat that default may occur, and foreclosure ensue. Many enterprises find it advantageous to preserve their borrowing power as a last recourse, but small businesses often do not have this option.

Summary: The debt mechanisms described here range from traditional commercial loans and bonds, new types of leasing arrangements and a multitude of federally-sponsored programs such as those of the Small Business Administration, credit unions, and even international programs. Small business, in particular, may wish to combine debt and equity financing. Government grants and loans may be less intrusive than equity financing, since lenders may require only repayment and not any other personal stake in the recipient's company. Other debt financing and State/local government methods are available including personal loans and loan guarantees, some of which are described in **Section 2.B.: Loans**.

LIST OF DEBT TOOLS
(In Alphabetical Order)

1. Agriculture: Rural Business-Cooperative Service -- Intermediary Relending Program
- *2. Bank/Insurance Financing
- *3. Commerce: Small Business Administration (SBA) -- Business Development Corporations
- *4. Commerce: SBA -- LOWDOC and FA\$TRAK Loans
- *5. Commerce: SBA -- Minority and Women's Prequalification Pilot Loans
6. Commerce: SBA -- Section 504 Certified Development Companies
- *7. Commerce: SBA -- Section 7(a) Loan Guarantees
- *8. Commerce: SBA -- Section 7(m) Microloans
9. Commerce: SBA -- Short Term Loans and Revolving Lines of Credit
10. Community Reinvestment Act
- *11. Convertible Debt
- *12. Credit Analysis
13. Credit Cards
- *14. Export-Import (EX-IM) Bank
15. Foundations: Program-Related Investments
- *16. Leasing
- *17. Mezzanine Financing
18. Micro-Loan Funds
19. National Cooperative Bank
20. National Credit Union Administration: Community Development Revolving Loans
21. Receivables Factoring (Accounts Receivable Financing)
- *22. Surety Bonds
23. Treasury: Community Development Financial Institutions Fund

* Stars indicate most highly rated mechanisms as described in the Comparison Matrix at the end of the narratives. See Introduction to the Guidebook for a description of the criteria used. Ratings of "High", "Moderate", "Low" are for comparison purposes only, as some ratings are necessarily subjective and data are incomplete.

**DEPARTMENT OF AGRICULTURE
RURAL BUSINESS-COOPERATIVE SERVICE
INTERMEDIARY RELENDING PROGRAM**

Description: The Intermediary Relending Program (IRP) provides loan funds for business facilities and community development projects in rural areas. Intermediary recipients include private non-profit corporations, public agencies, Indian groups, and rural cooperatives, which provide loans to ultimate recipients. The maximum loan to any one intermediary is \$2 million. The maximum loan maturity is 30 years and the interest rate is fixed at one percent per annum. A reserve for bad debts of six percent of outstanding loans must be accumulated over three years and then maintained. Loans made by an intermediary to an ultimate recipient are limited to no more than 75 percent of the financed project costs or no more than \$150,000. Both intermediaries and ultimate recipients (borrowers) must be unable to obtain the loan at reasonable rates and terms through commercial credit or other federal, State or local programs.

Actual Use: This is not a new federal program, but it has been administered by the Department of Agriculture only since 1995. Loans have ranged from \$250,000 to \$2 million and have average \$773,810. In Fiscal Year (FY) 1997, 77 loans were approved from 135 applications and loan obligations totaled \$37.6 million. The Department estimates that loan obligations will be \$37.1 million and \$35 million in FYs 1998 and 1999, respectively..

Potential Use: Pollution control and abatement are eligible purposes for loans by intermediaries to ultimate borrowers.

Advantages: The purpose of the program is to provide below-market interest rate loans to businesses unable to finance the proposed project through commercial credit or other government programs at reasonable rates and terms. Loans to intermediaries are at a very low fixed interest rate of one percent.

Limitations: This is not a grant program, but a federal loan to the intermediary, which cannot use loan funds for administrative or technical assistance expenses. Applications for potential intermediaries are considered in a quarterly national competition. An ultimate recipient cannot be located in a city with a population of 25,000 or more.

Reference for Further Information: See pages 6045-6063, Volume 63, Number 25, Federal Register, February 6, 1998. U.S. Department of Agriculture, Rural Business-Cooperative Service, Room 6321, South Agriculture Building, Washington, DC, Telephone: 202-690-4100, Internet: <http://www.rurdev.usda.gov/rbs/index.html>.

BANK/INSURANCE FINANCING

Description: Banks extend credit (commonly through loans and lines of credit) to businesses and individuals for a wide variety of reasons. A bank typically loans money for a specific period of time with the borrower paying a fixed payment each month that consists of a portion of the amount borrowed plus an interest charge. The interest charge covers the bank's expenses and the risk it assumes in making the loan. There are two types of bank loans, secured and unsecured. For secured loans, the borrower puts up collateral such as real estate, stocks, business assets, or something else of value that the bank can take if the borrower defaults on the loan. Unsecured loans are based on the credit of the borrower and often have a higher interest rate. Lines of credit are open accounts that can be drawn upon as needed up to their limit. They have a higher interest rate than most loans.

Actual Use: There are over 9,000 federally insured commercial banks in the United States. These banks make the majority of business loans in the country. Banks usually extend credit to stable, profitable businesses and individuals to help pay for business operations and expansion. They finance just about any asset for any business reason except for most types of business starts-ups. Bank loans for small businesses may range in size from a few thousand dollars to a few hundreds of thousand. Small business lines of credit generally have a smaller upper limit than loans.

Potential Use: Bank financing is a good option for established businesses that are profitable and have a good credit record. This generalization should hold true for any small businesses and any business in the environmental goods and services industry that fits this profile.

Advantages: Banks will make loans and offer lines of credit at reasonable interest rates to established businesses/people who need money for good reasons. Banks often lend to franchise businesses even as start-ups. Bank loans are a good source of financing for specific large purchases or business activities that will increase profitability. Banks may offer conveniences to their customers such as telephone or online funds transfers, single-account credit cards and checks, and detailed record keeping on accounts.

Limitations: Banks rarely lend to start-up businesses and to businesses in financial difficulties. For example, banks will usually not loan money to cover business operating losses. Banks may be hesitant to loan money to even profitable businesses in industries that are in a recession. Lines of credit are generally more expensive than loans.

Reference for Further Information: American Bankers Association (ABA), 1120 Connecticut Avenue, NW, Washington, DC, Telephone: 202-663-5221, Internet/World Wide Web site: http://www.aba.com/abatool/showme_rel.html?location=homepage or <http://www.aba.com/>.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
BUSINESS DEVELOPMENT CORPORATIONS**

Description: Business development corporations or BDCs are special-purpose institutions owned by private investors, financial institutions or large corporations, that are chartered and licensed by States to make loans to small businesses with the primary goal of job creation. Funding for BDCs is generally provided by participating financial institutions and corporations who interests are tied to making small business loans and increasing the availability of jobs.

Actual Use: As of 1996, fifteen States had BDCs including Arkansas, Georgia, Iowa, Kansas, Maine, Massachusetts, Mississippi, Montana, Nebraska, New Hampshire, New Mexico, New York, North Dakota, South Carolina, and Wyoming. BDCs can make conventional loans, enter into purchase/leasebacks, make SBA-guaranteed loans, and provide venture capital.

Potential Use: Business development corporations could be used to support or create small businesses working directly in, or in support of, the environmental goods and services industry. Alternatively, they might support an industry sub-sector such as environmental remediation firms involved in the assessment and cleanup of brownfields properties. BDCs could potentially be developed and established in all fifty States. In addition, some Indian Tribes may wish to adopt this particular financing strategy.

Advantages: BDCs generally qualify as lenders under the Small Business Administration's 501 program, which means they can make loans 90% guaranteed by the SBA. Some BDCs own and operate their own Small Business Investment Companies, enabling them to provide venture investment capital along with debt financing.

Limitations: Business development corporations are limited to the States supporting the concept and BDC assistance is limited to small businesses.

Reference for Further Information: U.S. Small Business Administration, 409 3rd Street, SW, Washington, DC 20416, Telephone: 202-205-6600. Association of Small Business Development Centers, 1050 Seventeenth Street, NW, #810, Washington, DC 20036, Telephone: 202-887-5599. State Departments of Commerce or Economic Development are also a good source of information about BDCs. Information on these and other State agencies can be accessed on the World Wide Web using FinanceNet, the Internet's home for public financial management information. FinanceNet is located at <http://www.financenet.gov>.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
LOWDOC AND FA\$TRAK LOAN PROGRAMS**

Description: The LowDoc (low documentation) and FA\$TRAK loan programs are streamlined variations of the Section 7(a) Loan Guarantee Program limited to loans of no more than \$100,000. LowDoc offers a simple, one-page application form (Form-4-L) and quick turnaround on loan reviews. The applicant must first satisfy all of the lender's requirements, then the lender may request a LowDoc guaranty, up to 80% of the loan amount. Completed applications are usually processed by SBA within two or three days of receipt from the lender. Consequently, the loan decision process relies heavily upon the strength of the applicant's character and credit history. Business startups and firms with fewer than 100 employees and average annual sales not exceeding \$5 million for the past three years are eligible.

FA\$TRAK is a pilot program with a limited number of lenders who are authorized to use their existing documentation and procedures to make, service and liquidate SBA guaranteed loans. There are no additional forms and no waiting for SBA loan approval. Under this program SBA may guarantee up to 50 percent of the loan but the terms, interest rates and uses are the same as for any 7(a) loan. Maturities of term loans are usually 5 to 7 years for working capital and up to 25 years for real estate or equipment. Revolving credits must have a termination date not more than 5 years after the first disbursement. The interest rate on a fixed rate loan must not exceed the Prime rate plus 2.25 percent if the maturity is less than seven years and Prime plus 2.75 percent if the maturity is seven years or longer. However, for loans of less than \$25,000 the maximum interest rate . The SBA optional peg rate for variable rate loans is calculated and published quarterly in the *Federal Register*.

Actual Use: In Fiscal Year 1997, the SBA made 14,738 LowDoc loans and 4,103 FA\$TRAK loans, although relatively few lenders have been certified for FA\$TRAK.

Potential Use: Small firms can use a LowDoc or FA\$TRAK loan to pay for needed environmental equipment.

Advantages: Because the loan decision process relies heavily upon the strength of the principal's character and credit history, good ideas may be given less weight.

Limitations: SBA limits on firm size are lower for LowDoc guarantees and the percentage of the loan guaranteed is lower under FA\$TRAK.

Reference for Further Information: U.S. Small Business Administration, 409 Third Street, SW, Washington, DC 20416, Telephone: 800-827-5722, Internet: www.sbaonline.sba.gov/.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
MINORITY AND WOMEN'S PREQUALIFICATION PILOT LOAN PROGRAMS**

Description: As variations on the Section 7(a) loan guarantee program, the Minority and Women's Prequalification Pilot Loan Programs use non-profit and for-profit intermediaries to assist prospective minority and woman borrowers in developing viable loan application packages. To be eligible, a business must be at least 51% owned and operated by racial/ethnic minority or women. It also must employ 100 or fewer and have had \$5 million or less annual sales for the past 3 years. Once the loan package is assembled, it is submitted to the SBA for expedited consideration. The focus is on credit history, ability to repay, and probability of success. A decision usually is made within three days. If the application is approved, the SBA issues a letter of prequalification stating the SBA's intent to guarantee the loan. The maximum amount for loans under the programs is generally \$250,000, although some districts set other limits for minority loans. SBA will guarantee up to 80% of loans no larger than \$100,000 and 75% of loans up to \$250,000. The intermediary then helps the borrower locate a lender offering the most competitive interest rates. Intermediaries (usually small business development centers) may charge a reasonable fee for loan packaging. Generally, fees charged by for-profit organizations will be higher than those charged by non-profits. Two different forms are used, Form MPQ-APPL for minorities and Form WPQ-APPL1 for women.

Actual Use: The minority program has operated since April 1995, with over \$26 million in guaranteed loans. Both programs are pilots but appear likely to be retained.

Potential Use: Woman and minority owned firms can use SBA guaranteed loans to pay for needed environmental equipment.

Advantages: The use of intermediaries to assist potential borrowers in developing viable loan packages has allowed SBA to expedite consideration of applications.

Limitations: The minority program is available at 16 pilot sites and the women's program is available statewide in 6 states and elsewhere in 11 metropolitan cities. Limitations of the Section 7(a) guarantee program apply to both programs.

Reference for Further Information: U.S. Small Business Administration, 409 Third Street, SW, Washington, DC 20416; Telephone: 800-827-5722 or 202-205-6673, Fax: 202-205-7064, Internet: www.sbaonline.sba.gov/.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
SECTION 504 CERTIFIED DEVELOPMENT COMPANIES**

Description: Under Section 504 of the Small Business Investment Act, the Small Business Administration (SBA) guarantees debentures issued by private nonprofit Certified Development Companies (CDC's) to provide up to 40 percent of a long-term, fixed-rate financing package for major fixed assets. The guaranteed loans are to assist small businesses in the acquisition of land and building, construction, expansion, renovation and modernization, machinery and equipment. Typically, the small business must provide at least ten percent equity and a private-sector lender must provide fifty percent of project cost, in return for a senior lien. The maximum SBA-guaranteed debentures generally is \$750,000, but may be up to \$1 million. Interest rates are pegged to an increment above the current market rate for five-year and ten-year U.S. Treasury issues. Maturities of ten and twenty years are available. Fees approximate three percent of the face amount of the debenture and may be financed with the loan. The project assets being financed are used as collateral and personal guaranties of the principal owners are also required.

Actual Use: There are about 290 Certified Development Companies that can participate. SBA guarantees have averaged approximately \$350,000 and have been as much as \$1 million. In Fiscal Year (FY) 1997 guaranteed loan obligations were \$2.65 million. SBA guaranteed loan obligation estimates for FYs 1998 and 1999 are \$1.7 million and \$3 million, respectively.

Potential Use: Section 504 debentures can be used in conjunction with senior private lending to finance major fixed assets needed to meet environmental requirements.

Advantages: The SBA-guaranteed portion of a total financing package serves as a credit enhancement. CDC's work with private sector lenders to make loan financing deals feasible.

Limitations: For fiscal 1998 the estimated program volume is only \$1.73 million. SBA expects one job to be created, on average, for every \$35,000 guaranteed. The business cannot have a tangible net worth in excess of \$6 million and cannot have an average net income in excess of \$2 million after taxes for the preceding two years. In addition, the business cannot be engaged in speculation or investment in rental real estate.

Reference for Further Information: Contact Office of Loan Programs, Small Business Administration, 409 Third Street, SW, Washington, DC 20416, Telephone: 202-205-6485 or 800-827-5722, Fax: 202-205-7064, Internet: www.sbaonline.sba.gov/financing/.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
SBA SECTION 7(a) LOAN GUARANTEES**

Description: Section 7(a) of the Small Business Act authorizes the Small Business Administration (SBA) to guarantee commercial loans to small businesses that cannot get financing on reasonable terms via normal lending channels. Eligibility is determined by the type and size of business, use of the loan, and certain special circumstances. As a rule, an independently owned and run business which is not dominant in its industry will be eligible. The SBA has developed industry-specific size standards in terms of number of employees or sales revenues. Holders of at least 20% ownership in a business usually must guaranty the loan. The basic loan guaranty program is used for long-term loans to qualified firms for purposes such as real estate acquisition, working capital, or purchase of inventory or equipment. The SBA can guarantee 75% of the loan amount up to \$750,000 and 80% of loans of \$100,000 or less. The interest rate on a fixed-rate loan of \$50,000 or more is not to exceed 2.75 over the prime lending rate. Maturities are for up to 10 years for working capital and up to 25 years for fixed assets; however, they may be shorter, depending on the borrower's ability to repay. Equipment loan maturities cannot exceed the life of the equipment. SBA charges lenders a guaranty fee of 2% of the guaranteed portion of the loan when it is \$80,000 or less; 3% of the guaranteed portion of the loan if it is more than \$80,000 but less than \$250,000; 3.5% of the next \$250,000, up to \$500,000; and 3.875% of the guaranteed portion over \$500,000. All loans have a 0.5% annualized servicing fee on the outstanding balance of SBA's guaranteed portion of the loan.

Actual Use: Section 7(a) guaranteed loans account for more than 95% of the dollar volume of SBA's lending activity. The SBA approved 34,610 loans totaling \$7.8 billion in Fiscal Year 1997. SBA loan estimates for Fiscal Years 1998 and 1999 are \$8.9 billion and \$10 billion, respectively.

Potential Use: SBA guaranteed loans could be used to buy equipment needed to meet environmental requirements and for purposes related to producing and marketing environmentally friendly goods.

Advantages: The SBA guarantee gives small firms access to loan funds not otherwise available by protecting lenders against loss.

Limitations: A bank may not be interested in processing an application for an SBA-guaranteed loan because of the limited interest rate. SBA guaranteed loans cannot be used for real estate held primarily for investment. Also, SBA size standards for small businesses limit eligibility to firms below certain revenue or employment levels, as a general rule. There is a \$500,000 loan limit.

Reference for Further Information: U.S. Small Business Administration, 409 Third Street, SW, Washington, DC 20416, Telephone: 800-8-ASK-SBA, Internet: www.sbaonline.sba.gov/or www.business.gov/. See also: www.sbaonline.sba.gov/regulations/siccodes for SBA small business size standards by Standard Industrial Classification (SIC) codes.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
SECTION 7(m) MICROLOANS**

Description: Under Section 7(m) of the Small Business Act, the Small Business Administration (SBA) uses non-profit organizations with experience in lending and technical assistance as intermediary lenders to make short-term loans of from under \$100 up to \$25,000. Although microloans may not be used to purchase real estate or pay existing debts, they may be used for working capital and to buy machinery and equipment, furniture and fixtures, inventory, and supplies. Virtually all types of for-profit businesses that meet SBA eligibility requirements can qualify for a microloan and complete applications can usually be processed in less than one week. The average loan size has grown from \$10,000 to \$10,500 and the loan maturity may be as long as six years. Interest rates are pegged to no more than four percent over the prime rate. In most cases, any assets bought with the microloan serve as collateral and the personal guarantees of the business owners are required.

Actual Use: Started as a demonstration program in 1992, the program has become a regular part of SBA's complement of tools. In Fiscal Year (FY), the program made available approximately \$19.5 million for direct loans, \$24.6 million for loan guarantees, and \$12.9 million for technical assistance grants available in fiscal 1998. Program estimates for FY 1999 are \$60 million in direct loans, \$11.9 million in loan guarantees, and \$12 million in technical assistance grants.

Potential Use: SBA microloans have a maximum loan amount large enough for very small firms to pay for many types of environmental measures which might be required or to provide working capital needed by a small environmental services venture.

Advantages: Microloans can provide needed capital to start an environmental services business or produce/market environmentally friendly goods.

Limitations: Interest rates are not subsidized and borrowers risk losing personal property based on required personal guarantees if they cannot pay back loans. Also, relatively easy availability of microloans can cause some businesses to borrow less than they really need.

Reference for Further Information: U.S. Small Business Administration, 409 Third Street, SW, Washington, DC 20416, Telephone: 800-827-5722 or 202-205-6485, Fax: 202-205-7064, Internet: www.sbaonline.sba.gov/.

**DEPARTMENT OF COMMERCE
SMALL BUSINESS ADMINISTRATION
SHORT TERM LOANS AND REVOLVING LINES OF CREDIT (CAPLines)**

Description: A line-of-credit, or bank line, is a moral, as opposed to a contractual commitment, to make loans to a borrower up to a set maximum during a set period, usually a year (see **Section 3., Letter of Credit/Lines of Credit**). It is not typical to charge a commitment fee but it is common to require that compensating balances be kept on deposit. A revolving line-of-credit is an agreement between a bank and a customer whereby the bank extends a line-of-credit during the term of the agreement, usually a year or more. The customer can convert it to a term loan by borrowing as needed. As the borrower repays the loan, an amount equal to the repayment can be borrowed again under the terms of the agreement. In addition to interest on loans, the bank charges a fee for the commitment to hold funds available. A compensating balance also may be required.

CAPLines is the SBA collection of five programs for helping small businesses meet short-term and cyclical working capital needs. Most of the regulations governing the Section 7(a) loan guarantee program govern CAPLines. Except for the Small Asset-Based Line, SBA usually can guarantee up to \$750,000 from a commercial lender. Seasonal Liens are revolving or non-revolving working-capital advances against anticipated inventory and accounts receivable during peak seasons for firms that experience seasonal fluctuations. Contract Lines pay the direct labor and material cost of performing assignable contracts. Builders Lines finance direct labor and material costs, with a commercial or residential construction or rehabilitation project as collateral. Standard Asset-Based Liens are revolving lines of credit for firms unable to meet credit standards associated with long-term credit. Small Asset-Based Lines are asset-based revolving lines of credit of up to \$200,000.

Actual Use: Lines-of-credit are common in commercial bank lending, particularly to meet customers' working capital needs. Guarantees of working capital account for a significant percentage of SBA's Section 7(a) funds.

Potential Use: Guarantees or lines of credit can provide the capital needed by small firms to meet payroll, acquire inventory or pay other costs involved in producing environmental goods/services.

Advantages: SBA guarantees let companies obtain otherwise unavailable or unaffordable capital

Limitations: SBA limits on firm size could preclude some growing environmental goods and services companies from eligibility.

Reference for Further Information: U.S. Small Business Administration, 409 Third Street, SW, Washington, DC 20416, Telephone: 800-827-5722 or 202-205-6485, Fax: 202-205-7064, Internet: www.sbaonline.sba.gov/ or www.business.gov/.

COMMUNITY REINVESTMENT ACT

Description: The Community Reinvestment Act (CRA) of 1977 requires federally insured banks and thrift institutions to make capital available in low- and moderate-income communities. Regulations are issued and compliance audits are performed by the Comptroller of the Currency and Office of Thrift Supervision, the Federal Reserve Board, and the Federal Deposit Insurance Corporation (FDIC). Institutions are required to prepare CRA Statements indicating the types of credit they offer in their local communities and to maintain a file of public comments on their CRA performance. They are evaluated by the regulatory agencies on twelve assessment factors relating to ascertainment of community credit needs, types of credit offered and extended, discrimination and other illegal credit practices, and participation in community development. Possible performance ratings range from substantial noncompliance to outstanding. Federal regulators are required to consider institutions' CRA records in their reviews of applications for expansions or restructuring. Although there is a tendency to emphasize economic development, the definition of community development includes environmental clean-up or redevelopment of an industrial site as part of an effort to revitalize the low or moderate income community in which the property is located.

Actual Use: All federally chartered or insured depository institutions that grant credit to the public in the ordinary course of business are covered by a continuing and affirmative obligation to help meet the credit needs of their entire communities. Some institutions have better records than others.

Potential Use: The CRA requirement can be used to help persuade regulated financial institutions to participate meaningfully in environmental clean-up. This can be helpful to small firms needing bank loans to finance environmental equipment or pay for environmental services.

Advantages: Regulated lenders tend to be more responsive to credit needs in the communities they serve. Many are more receptive to participation in federal programs such as Small Business Administration loan guarantees.

Limitations: Credit unions are not covered and small institutions are not required to collect CRA information or report their community reinvestment activities.

Reference for Further Information: Comptroller of the Currency, Compliance Management Division, 250 E Street, SW, Washington, DC 20219. Federal Deposit Insurance Corporation, Office of Consumer Affairs, 550 Seventeenth Street, NW, Washington, DC 20429, Internet address: www.fdic.gov/; Board of Governors of the Federal Reserve System, Division of Consumer and Community Affairs, 20th & Constitution Avenue, NW, Washington, DC 20551; Office of Thrift Supervision, Compliance Programs, 1700 G Street, NW, Washington, DC 20552; Federal Financial Institutions Examination Council, 2100 Pennsylvania Avenue, NW, Suite 200, Washington, DC 20037. See also EPA's web site at: www.epa.gov/swerosps/bf/html-doc/cra.htm.

CONVERTIBLE DEBT

Description: Convertible debt is loan instrument obtained from a potential capital investor that can be converted to equity in the business under certain conditions at some future date. The lender earns interest on the loan until it is either paid off or the conversion option exercised. The decision regarding whether or not to convert the debt to equity usually rests with the lender. Convertible debt offers lender/investors flexibility by permitting them to control some of the risks and rewards of their investment. The lender or potential investor may be a venture capital firm, a financial institution, a Small Business Investment Corporation, or individual angel investors.

Actual Use: The most common forms of convertible debt issued by businesses are securities such as debentures or bonds and stock options. Many businesses, including small companies, use convertible debt as a means of raising capital to finance business start-ups and/or expansion. In 1996 alone, U.S. companies raised approximately \$13 billion dollars through the issuance of an ever expanding array of convertible securities. At the current pace, securities convertible into stock alone should constitute three to four percent of the total capital raised by all companies nationwide.

Potential Use: The growing use of convertible debt is projected to continue over the next few years although maybe not at such dramatic rates as enjoyed in 1996. Convertible debt is a valuable financing tool that has the potential to help any business. Small businesses in the environmental goods and services industry should certainly evaluate this alternative when looking to raise capital.

Advantages: Convertible debt is an option that is often suggested by the lender making its eventual implementation more likely to succeed. This financing option is a way that potential investors can control some of their risk when they may not feel totally confident about an investment. It also affords the business the opportunity to negotiate down the future equity offer in return for higher debt interest returns on the debt up-front.

Limitations: Convertible debt is still debt and will be reflected on a company's balance sheet. This may make it difficult for the company to borrow in the future until the convertible debt is repaid or converted to equity. Convertible debt is usually more expensive than a straight business loan and more complicated than a straight investment.

References for Further Information: *INC. Magazine Archives*, INC. Online. This source is located on the World Wide Web at <http://www.inc.com/incmagazine/>. Another good source is *CFO Magazine* located on the Web at <http://www.cfonet.com/>.

CREDIT ANALYSIS

Description: A credit analysis is the process of measuring a credit applicant's ability and willingness to repay debt. It is an assessment of the probability that a potential customer will pay on time and in full. The standard framework for credit analysis that has developed over a number of years includes the "four C's of credit," capacity, capital, character, and conditions. The definition of these terms as they apply to credit applicants, both individual and businesses, are:

- c Capacity: a measure of ability to pay debts out of discretionary income (salary less living expenses and other debt) under normal conditions;
- c Capital: the difference between the assets and liabilities (their equity or savings);
- c Character: the desire to meet or fulfill responsibilities based on references and prior debt-repayment record; and
- c Conditions: any special circumstances that are beyond the control of credit applicants and will be temporary in nature.

The information in these four areas is gathered through a review and analysis of the applicant's credit history (including payment practices), financial statements (looking at liquidity and solvency), and records on file with credit reporting companies (such as Dun and Bradstreet)/ bureaus; discussions with bankers and suppliers; and applicant interviews. The detail of the credit analysis will be based on a ongoing comparison of the value of information obtained with the benefits gained.

Actual Use: Credit analyses of one form or another are performed routinely by banks, savings and loans, other financial institutions, investors, businesses, and individuals whenever extending credit to a business or individual. The intensity of the credit analysis is directly related to the amount of money involved.

Potential Use: If small and/or environmental businesses seek credit from an established professional financing source, they will likely undergo a credit analysis, whether they know it or not.

Advantages: A credit analysis helps protect the lending party from poor credit risks. If shared with the applicant, credit analysis information can reveal valuable facts about their business or finances.

Limitations: A credit analysis does not provide answers, only information. The credit decision must be made by the lending party and only time will tell whether the right decision is made.

Reference for Further Information: The credit department of any bank, savings and loan, finance company, or other lending institution. Basic financial management texts in local libraries.

CREDIT CARDS

Description: Millions of credit cards are issued to individual and businesses each year by banks and other financial institutions. These cards, both personal and corporate, represent de facto lines of credit or potential debt. They can be used to pay for almost any expense within the credit limits of the particular account. Credit cards may be revolving accounts that roll over debt on a monthly basis while charging interest rates of up to 21 percent or more. Alternatively, they may be the equivalent of simple cash advances that must be repaid in full each month.

Actual Use: Small, medium, and even large-sized companies frequently use credit cards on a frequent and ongoing basis to meet a wide variety of business needs ranging from travel and accommodation expenses to the purchase of office supplies and small equipment. Many entrepreneurs/small businesses use credit cards (sometimes extensively) to help finance their business start-ups. The financial entities that issue credit cards also frequently supply their card holders with special checks that can be drawn against their credit card accounts. These checks can even be used to pay some business suppliers who normally might not accept a credit card.

Potential Use: Properly used, credit cards will continue to represent a good source of modest amounts of debt capital for small- and other-sized businesses. These cards will remain an excellent choice for meeting any business expenses that can, and will be, repaid in a short period of time (less than two months). The use of credit cards for business-related travel is one area that is expected to continue to enjoy strong growth. Many airlines, hotels, car rental agencies, and other travel-related businesses are increasingly showing preference for travelers who use credit cards.

Advantages: Credit cards can be obtained even by start-up businesses that cannot get other types of credit. Credit cards are a good supplemental source of money for meeting unexpected expenses and making needed but unplanned emergency purchases. These cards are a good tool to use when you need to isolate and/or itemize in detail certain specific types of business expenses such as travel and office supplies.

Limitations: Credit cards are normally not a good tool for financing large amounts of debt. Financing business expenses with credit cards can be extremely costly if the debt incurred is not repaid promptly. Credit cards must be used responsibly (with restraint) by businesses and employees or serious financial problems may develop. Misuse of credit cards can seriously impair the credit rating of businesses and individuals.

Reference for Further Information: *Credit Crossroads* is a credit library with information on credit cards, credit reports, bankruptcy, and credit repair. For information on *Credit Crossroads*, contact by E-mail: moester@perdue.edu, Telephone: 765-494-8718, Fax: 765-494-0869.

EXPORT-IMPORT (EX-IM) BANK

Description: The Export-Import (Ex-Im) Bank is responsible for assisting the export financing of U.S. goods and services through loan, guarantee programs. Two assistance priorities are small business and environmental exports. The Environmental Exports Program includes a short-term loan and guarantee programs. The Environmental Export Insurance Policy provides multi-buyer or single-buyer coverage. It protects the exporter against loss for up to 180 days with 95 percent commercial and 100 percent political coverage, no deductible, and a “hold-harmless” assignment of export receivables. Exports generally considered eligible include toxic material handling devices, effluent pollution control devices, effluent pollution control devices, and instruments to measure or monitor air or water quality. Loan repayment terms are the maximum permissible under Organization for Economic Cooperation and Development (OECD) guidelines. Generally, available financial assistance includes the Working Capital Guarantee Program, Export Credit Insurance, and Direct Loans and Guarantees. Working capital guarantees cover 90 percent of the principal and interest on commercial loans to creditworthy small and medium-size companies that need funds to buy or produce U.S. goods or services for export. Guarantees of commercial loans to foreign buyers of U.S. goods or services cover 100 percent of principal and interest against both political and commercial risks of nonpayment. Direct loans provide foreign buyers with competitive, fixed-rate financing for their purchases from the U.S.

Actual Use: Ex-Im Bank programs are used extensively to support U.S. exports to higher risk foreign markets, including nations where there are no political risks.

Potential Use: Ex-Im Bank programs can assist firms in exporting environmental goods and services by substantially reducing risks which might otherwise preclude their involvement in exporting.

Advantages: Encouraging and assisting environmental exporting, particularly by small firms, is an Ex-Im Bank priority.

Limitations: Ex-Im Bank generally will not assist exports of most military-related goods and services or insure export sales of goods with more than 50 percent foreign content. Only firms qualifying as small businesses under Small Business Administration guidelines are eligible for the short-term Environmental Export Insurance Policy.

Reference for Further Information: The Export-Import Bank has a U.S. toll-free number, 800- 565-3946, to provide information on the availability and use of working capital guarantees, export credit insurance, direct loans and guarantees, and other programs. The toll-free number can be used for fax retrieval by pressing 1, then 2, at the voice prompts. The mailing address is 811 Vermont Avenue, NW, Washington, DC 20571, and the Internet address is www.exim.gov. Regional offices are located in New York City, Miami, Chicago, Houston, and Long Beach.

FOUNDATIONS: PROGRAM-RELATED INVESTMENTS

Description: A program-related investment is a loan or other investments made by a foundation to a for-profit or non-profit organization for a project related to the foundation's stated purpose and interests. Foundations make program-related investments mainly to maximize the impact of their programs, provide an alternative form of financing when grant making is inappropriate or insufficient, and recycle dollars to increase funding availability. Program-related investment tools include loans, which are used most, and loan guarantees, equity investments, asset purchases, and linked deposits. Investments are often made from a revolving fund and may involve loan guarantees, purchases of stock or other kinds of financial support in addition to loans. The foundation generally expects to get its money back with limited, or below-market, interest, which will then provide additional funds for loans to other organizations. Half of program-related investment dollars are used to provide capital to intermediary organizations, such as loan funds and development banks, which in turn lend funds to development agencies and service providers. A small number of foundations use program-related investments to acquire or improve property held for charitable purposes. Less than 8 percent of program-related investment dollars go for environmental purposes; however, the share of support for the environmental doubled between 1990 and 1995.

Actual Use: Only about 250 foundations make program-related investments and the Ford Foundation is by far the largest player in the field, accounting for perhaps a third of the total. The next largest, the John D. and Catherine T. MacArthur Foundation, has loaned or invested less than a third of the Ford Foundation's amount. Other top program-related investors include the Met Life Foundation, Packard Foundation, Prudential Foundation, and George Gund Foundation.

Potential Use: Program-related investments can be a source of low cost debt or equity capital to support an organization's environmental projects. Although only about 15% of foundations making these investments have made equity investments, most provide cash flow or bridge financing.

Advantages: Program-related investments offer a technique for foundations to assist for-profit entities either directly or indirectly. Nearly a third of those making program-related investments have been involved in capitalizing and earned income venture.

Limitations: Program-related investments are not grants. Although profit on the investment is not the objective, foundations expect to get their principal back so it can be reused. The number of foundations making program-related investments in any one year is relatively small and fluctuates from year to year. Evidence indicates that investments increase when the stock market inflates foundations' asset values. The median investments tend to be around \$250,000.

Reference for Further Information: Contact The Foundation Center, 79 Fifth Avenue, New York, NY 10003-3076, Telephone: 800-424-9836 or 212-620-4230, Internet: www.fdncenter.org/.

LEASING

Description: A lease is a rental contract covering a specific period of time during which the owner of an asset (lessor) allows another party (lessee) to use the asset according to set terms in return for a series of regular fixed payments. There are two general types of leases, operating leases and capital leases. The former is a short-term (five years or less) instrument offered by equipment manufacturers that can frequently be canceled by the lessee before the expiration of its term. Maintenance and insurance are typically included in the operating lease payments. A capital, or finance lease, generally extends over a longer term equal to the useful economic life of the asset and cannot be canceled by the lessee. In this second type of lease, the lessee is responsible for personal property taxes, maintenance, and insurance.

Actual Use: Leasing is used by many businesses and its popularity is growing. U.S. Department of Commerce figures for 1995 reveal that twenty-eight percent of the estimated \$571.1 billion spent by businesses on productive assets, was used for leasing. Lease financing is available from banks, finance companies, specialized leasing companies, and equipment manufacturers or retailers.

Potential Use: Leasing could be used by any environmental and other business that has to make important investments, but does not want to tie up large amounts of money. It could be a very efficient way for high technology environmental firms to acquire and use equipment that may soon become obsolete. These firms must have a good enough cash flow to make the lease payments.

Advantages: Leasing does not require a large up-front cash outlay. It can protect a firm against equipment obsolescence and inflation. Lease approvals can be much faster than loan approvals. Lease terms can be very flexible and customized to specific situations. Lease payments can be deducted as an operating expense and written off faster than depreciation of owned equipment.

Limitations: Leasing can result in the loss of a substantial depreciation tax deduction over time. Leasing eliminates any salvage value for equipment that might be realized when purchased equipment is finally sold. Interest rates for leases can be very high. You cannot borrow money in the future against the value of the lease as you can against equipment that is owned. The asset may be repossessed if a lease payment is missed.

Reference for Further Information: Great Lakes Environmental Finance Center Draft Report (prepared for U.S. EPA), *An Inventory and Assessment of Pollution Control and Prevention Financing Programs*, December 1996. Great Lakes EFC, The Urban Center, Cleveland State University, UB 215, Cleveland, OH 44115, Telephone: 216-687-4590, Fax: 216-687-9277, World Wide Web site: <http://www.csuohio.edu/glefc/>.

MEZZANINE FINANCING

Description: Mezzanine financing is interim financing which fills the gap that often exists in small business finance between equity capital and conventional, secured lending by banks and other senior lenders. Since it is usually subordinated to debt owed to senior lenders, mezzanine finance can make a company with an otherwise weak balance sheet more attractive to banks and other sources of financing. Private placements of subordinated debt for non-investment grade companies generally require an internal rate of return to the lender based on the lender's costs of capital and perceived credit risk. This can be achieved by various structures. To compensate for the greater risk involved in their usually junior or unsecured status, mezzanine loans typically carry an interest rate one to three percentage points above senior, secured loans and often include an equity kicker such as stock warrants or convertibility.

Companies that have outgrown the start-up phase but are not yet large enough for traditional corporate finance are candidates for mezzanine financing if they have strong management, identifiable growth opportunities, and stable or growing cash flow. Mezzanine financing is not permanent, typically lasting five years, although subordinated debt may last seven to nine years. The minimum term may be as little as three years and the maximum is very rarely over twelve. The amount financed may be as much as \$100 million.

Actual Use: Mezzanine financing is a common financial tool for rapid expansions, management buy-outs, spin-offs of subsidiaries, and bridges to initial public offerings. Some Small Business Investment Companies (SBIC's) specialize in mezzanine financing (see **Section 10.A., SBA: Small Business Investment Companies**). When used for leveraged acquisition financing it usually is accompanied by senior debt provided by banks or institutional investors, as well as the issuance of common or preferred stock. When used for growth capital it may be used exclusively or in conjunction with equity securities as a component of a more comprehensive debt restructuring.

Potential Use: Mezzanine finance can be an excellent source of long-term growth capital, in that it tends to be less restrictive than bank debt and less delusive and costly than equity capital.

Limitations: Mezzanine finance is essentially private placement of subordinated debt, although it may involve some rights to equity. The cost of debt financing increases as the proportion of debt in the capital structure increases.

Reference for Further Information: Contact the Small Business Administration Answer Desk at (800) 827-5722 for the location of the closest Small Business Development Center, which can provide information on the use of mezzanine financing.

MICRO-LOAN FUNDS

Description: Micro-loans are relatively small loans, generally below the size traditional business lenders have tended to make or even consider making because of their transaction costs and overhead burdens. Micro-loans funds have been established primarily by non-traditional financial intermediaries, such as community development corporations, to provide resources for loans in a range from a few hundred dollars to a few thousand dollars. These lenders tend to target their micro-loans to low-income communities. Their borrowers tend to be low-income entrepreneurs who do not have access to the credit resources typically used by their middle-income counterparts, who tend to take out second mortgages on their homes, run up their credit card balances, or borrow from friends and family members for similar sums. Micro-lending tends to be based on character rather than collateral. The sources of micro-loan funds include not only federal programs, but also program-related investments by foundations and equity equivalent investments and lines of credit from commercial banks, leveraged by state linked deposit programs and the Community Reinvestment Act (see **Section 9., Community Development Financial Institutions; Section 10.B., Community Development Financial Institutions Fund; Section 10.B., Section 7(m) Micro-loans; and Community Development Block Grant** topics in **Section 2.C.: Grants**).

Actual Use: Since the Ford, Rockefeller, and Charles Stewart Mott Foundations funded one in 1983, micro-loan funds have enjoyed increasing support. Over a hundred micro-loan funds have been set up specifically to serve low-income women. Most states now have numerous micro-lenders. For example, the Indiana Small Business Development Corporation uses four intermediaries for micro-loans.

Potential Use: Micro-loans have been enough to start service businesses such as environmental consulting. They also may be sufficient for some small pollution prevention projects needed to comply with federal or state requirements.

Advantages: Micro-loan funds provide a source of debt financing otherwise generally not available to low-income entrepreneurs.

Limitations: Micro-loans are debt which lenders expect to be repaid. Relatively small loans may prove to be insufficient, leaving the enterprise under-financed.

Reference for Further Information: National Congress for Community Economic Development, 11 Dupont Circle, NW, Suite 325, Washington, DC 20036, Telephone: 202-234-5009; Council for Urban Development, 1730 K Street, NW, Suite 700, Washington, DC 20006, Telephone: 202-223-4735, Fax: 202-223-4745, Internet: www.cued.org.

NATIONAL COOPERATIVE BANK

Description: The National Cooperative Bank (NCB) and its subsidiaries -- the NCB Development Corporation, Cooperative Funding Corporation and NCB Savings Bank FSB -- were set up to assist with the creation and support of cooperatives (see also **Section 5.A., Cooperatives**). NCB's programs for independent retailer-owned cooperatives provide loans at relatively attractive rates to the members of such cooperatives to enlarge or renovate their existing stores, buy new stores, and purchase equipment, inventory and fixtures. Loans can be used to acquire real estate as part of store acquisition or development. NCB's private placement program with SPP Hambro, an investment banking firm dedicated exclusively to the execution of private placements, sells cooperatives' debt security offerings directly to institutional investors. Offerings can be secured or unsecured senior long-term notes, mezzanine financing, or subordinated debt. The NCB Development Corporation (NCBDC) provides capital to start-up and existing member-owned businesses directly or via developers and intermediary organizations. NCBDC participates in the life cycle of development, offering business planning advances, short-term lines of credit, interim loans, and permanent financing. NCBDC provides technical assistance to community development organizations and serves as a financial intermediary. The Cooperative Funding Corporation is a limited-purpose, registered broker-dealer. It provides corporate financing advisory services with a primary focus on asset securitization. NCB Savings Bank FSB is a federally chartered thrift institution providing deposit and banking services to cooperatively-structured businesses.

Actual Use: NCB and its subsidiaries have provided significant financing and technical assistance to numerous business cooperatives.

Potential Use: Because they are owned by their members, cooperatives can help small businesses that form them to solve environmental, logistical, and marketing problems.

Advantages: Cooperatives can give small, independent businesses advantages of larger scale and market power in financing, risk management, advertising, and certain logistical functions.

Limitations: The NCB and its subsidiaries assist only cooperatives. However, other forms of business can establish a cooperative to meet their common needs.

Reference for Further Information: National Cooperative Bank, Washington, DC, Telephone: 800-266-7562. NCB Development Corporation, 1401 Eye St., NW, Suite 700, Washington, DC 20005, Telephone: 202-336-7680, Fax: 202-336-7804. Cooperative Funding Corporation, 1401 Eye Street, NW, Suite 700, Washington, DC 20005, Telephone: 202-336-7788, Fax: 202-336-7659. NCB Savings Bank FSB, 139 South High Street, Hillsboro, OH 45133, Telephone: 800-322-1251 or 937-393-4246, Fax: 937-393-4064, Internet: www.ncb.com/. SPP Capital Partners, LLC, 330 Madison Avenue, 28th Floor, NY, NY 10017, Telephone: 212-455-4500, Fax: 212-455-4545.

NATIONAL CREDIT UNION ADMINISTRATION COMMUNITY DEVELOPMENT REVOLVING LOANS

Description: The National Credit Union Administration (NCUA) has created an Office of Community Development Credit Unions to provide counseling to credit unions serving low-income residents of distressed and financially under-served areas and administer agency's loan and technical assistance programs. The NCUA may lend up to \$300,000 at below-market interest rates to a designated low-income credit union and may make technical assistance grants and contract with outside providers to render technical assistance to both federal and state-chartered credit unions serving low-income communities. The purpose of the Community Development Revolving Loan Program for Credit Unions is to help credit unions serving low-income communities to provide needed financial services and stimulate the economy in the community served. Designated federal credit unions serving predominantly low-income members also may receive deposits, called shares, share drafts and share certificates, from nonmembers, such as foundations, state agencies and commercial banks.

Actual Use: There are over 11,200 credit unions with \$351.2 billion in assets and approximately 1,500 of these are federally insured community development credit unions, about 350 of which have been designated as "low-income". In 1996 NCUA made 21 community development loans for \$3 million and made 78 technical assistance grants for \$151,746. Grants have been used to purchase office equipment, provide salary assistance to hire qualified managers, train staff and volunteers, and secure professional audits of financial records.

Potential Use: NCUA loans can bolster credit unions' abilities to meet loan demand. In turn, community development credit unions can assist their members in financing home improvements needed to meet environmental health standards and can provide business loans to members who have small, environmentally oriented businesses.

Advantages: Credit unions tend to charge lower fees than commercial or savings banks.

Limitations: Credit unions can lend only their members and there are legal restrictions on membership eligibility. Also, small credit unions have limited loan capacity and those serving low-income communities have difficulty maintaining professional management.

Reference for Further Information: National Credit Union Administration, Office of Community Development Credit Unions, 1775 Duke Street, Alexandria, VA 22314, Telephone: 703-518-6610, Fax: 703-518-6619, E-mail: cdcumail@ncua.gov, Internet: www.ncua.gov/. NCUA regional offices are located in Albany, NY.

RECEIVABLES FACTORING **(Accounts Receivable Financing)**

Description: Receivables factoring is a type of financing common to some private industries in which items or payments receivable to the business are sold to a special lender, the factor. The business gets its money from the factor when it bills or invoices its customers. The factor buys the receivables at a discounted percentage of their face value, usually at somewhere between 75 and 90 per cent. The factor usually assumes the credit risks related to the receivables and takes responsibility for collection. The factor's primary concern is not with the creditworthiness of the business, but rather the creditworthiness of the receivables (those businesses owing money for the receivables).

Actual Use: Factors are common in businesses with substantial lag times between orders placed and receipt of payment. Examples of such businesses include the apparel/garment industry, retail firms, seasonal manufacturers, and any other business that is cyclical in nature and/or experiences unusual cash flow patterns. The *Guidebook* developers are not currently aware of any extensive use of this financing technique in the environmental goods and services industry, and would welcome information in that regard from readers.

Potential Use: Factoring may be a viable financing approach for environmental firms that have a hot product with numerous orders, but are experiencing temporary production difficulties. Its use would tend to be dictated by very industry- and company -specific considerations.

Advantages: Factors will finance start-up companies and companies with poor credit that have creditworthy customers. Factoring creates no official debt on the business balance sheet. Factoring can be self-financing in that the more a firm's sales grow, the more money there is available to finance the business. Factors usually provide credit and collection services, at which they are experts.

Limitations: Factoring is very expensive and significantly reduces profit margins. It generally cannot be used by businesses with low profit margins. Factors will not want to do business with firms whose customers are poor credit risks.

Reference for Further Information: Most factors can be found in the Yellow Pages of the local telephone book under "Factors" or "Finance." Banks should also have lists of local factors. There are numerous sources on the world wide web/Internet for information on factors/factoring and related terms such as accounts receivable financing. Log on and use one of the generic search engines such as *Lycos*, *Infoseek*, *Yahoo!*, *Excite*, etc. to locate sites under these terms. Blechman, Bruce Jan, and Levinson, Jay Conrad, *Guerrilla Financing: Alternative Techniques to Finance Any Business*, Houghton Mifflin Company, 2 Park Street, Boston, Massachusetts 02108, 11/91.

SURETY BONDS

Description: Surety bonds are a type of financial or credit guarantee underwritten by insurance and other companies. They are not insurance, but three party agreements where the surety provider agrees to stand in place of the principal (contractor), if the principal cannot meet its financial or performance obligations to a third party, the obligee (owner). The obligee is the one who requires a principal to obtain a surety bond before hiring it to undertake a project. In order to obtain a surety bond, the principal must prove to the surety company that it can meet the obligation in question. The surety company expects no losses and will seek reimbursement from the principal if a loss occurs.

Actual Use: Surety bonds are widely used in the United States for large construction-related projects. For federal public works projects, their use has been mandated for more than 100 years (since the Heard Act of 1894). The three most common types of sureties are bid bonds, performance bonds, and payment bonds. Each type provides guarantees, as appropriate, that contract obligations will be met, parties properly paid, and obligees will suffer no financial loss. Surety bonds are increasingly being used in environmentally-related areas as such as landfill closures, waste and tire hauling, mining reclamation, and remediation projects (petrochemicals, asbestos, lead, PCBs, etc.). While not generally used by start-up companies, surety bond use is growing with regard to small businesses. Industry records indicated there were 137 companies writing security bonds for small construction companies (sales of \$2 million or less) in 1995, an increase of 25 from 1993.

Potential Use: The potential for growth in the use of surety bonds appears to be strong in environmental areas, particularly regarding remediation. Sureties may be very helpful in ensuring the successful assessment and cleanup of brownfields properties. There also appears to be room for continued growth in writing sureties for small construction businesses.

Advantages: Surety bonds guarantee project completion and protect obligees against loss. They remain in force for the entire life of the contract and provide 100 percent financial coverage. Surety bonds have little impact on the principal's credit rating as they are typically issued on an unsecured basis. Surety companies will monitor projects on a continuous and independent basis, and investigate any complaints as they occur.

Limitations: Surety bonds can be expensive. Principals requiring surety bonds must undergo a pre-qualification process in which all aspects of their businesses, particularly their financials, are examined in great detail. The surety business is risky and contract losses may be large.

Reference for Further Information: National Association of Surety Bond Producers, 5301 Wisconsin Avenue, NW, Washington, DC 20015-2015. Telephone: 202-686-3700. Fax: 202-686-3656, World Wide Web site: <http://www.nasbp.org/>.

**DEPARTMENT OF THE TREASURY
COMMUNITY DEVELOPMENT FINANCIAL INSTITUTIONS FUND**

Description: The Community Development Financial Institutions (CDFI) Fund, created by the Riegle Community Development Regulatory Improvement Act of 1994, promotes economic revitalization and community development by providing greater access to capital for communities that face serious social and economic problems. The Fund is a wholly-owned federal government corporation within the Treasury Department which may provide technical assistance and make equity investments, grants, loans, or deposits on a matching basis. All financial assistance must be matched on a t least a one-to-one basis with non-federal funds which are at least comparable in form and value.

Eligible community development financial institutions are private for-profit and non-profit financial institutions with community development as their primary mission (e.g., community development banks and credit unions, non-profit loan funds, micro-enterprise loan funds, and community development venture capital funds). CDFI Fund investments become part of the leveragible capital base of these institutions. The CDFI Fund also has a Bank Enterprise Award (BEA) Program intended to encourage insured depository institutions (banks and thrifts) to increase their lending and services in distressed communities and to invest in and support CDFI's.

Actual Use: In fiscal 1997 the CDFI Fund awarded \$38.3 million in financial and technical assistance. In total, it has awarded \$75 million to nearly eighty institutions.

Potential Use: With support from the CDFI Fund, community development financial institutions can increase financing for small businesses producing or marketing environmentally friendly goods or services.

Advantages: Community development financial institutions are particularly well suited for involvement in brownfields redevelopment.

Limitations: The CDFI Fund requires a one-to-one match, which means that applicants must have substantial non-federal support.

Reference for Further Information: U.S. Department of Treasury, Community Development Financial Institutions Fund, 601 Thirteenth Street, NW, Suite 200 South, Washington, DC 20005, Telephone: 202-622-8662, Fax: 202-622-7754, Internet: <http://www.treas.gov/cdfi/>.

OTHER

Description:

Actual Use:

Potential Use:

Advantages:

Limitations:

Reference for Further Information:

**COMPARISON MATRIX FOR SMALL BUSINESSES AND EGSI -
DEBT TOOLS**

Criteria/ Debt Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
Agriculture: RB-CS Intermediary Relending Program	Low	Low	Mod.	Mod.	Mod.	High
*Bank/Insurance Financing	High	High	Mod.	Mod.	Mod.	High
*Commerce: SBA Business Development Corporations	Mod.	Mod.	Mod.- High	High	High	High
*Commerce: SBA LOWDOC & FA\$TRAK Loans	Mod.	Low- Mod.	High	Mod.- High	High	Mod.- High
Commerce: SBA Minority & Women's Prequalification Pilot Loans	Low	Low	High	High	High	Mod.
Commerce: SBA Sect. 504 Certified Develop- ment Companies	Low	Low	Mod.	Low- Mod.	High	Mod.
*Commerce: SBA Section 7(a) Loan Guarantees	Mod.	High	Mod.	Mod.- High	High	Mod.- High

COMPARISON MATRIX continued

Criteria/ Debt Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
*Commerce: SBA Section 7(m) Microloans	Mod.	Low- Mod.	High	Mod.- High	High	Mod.- High
Commerce: SBA Short-Term Loans & Revolving Lines of Credit	Mod.	Low	Mod.	Mod.- High	High	Mod.- High
Community Reinvestment Act	High	Mod.	Mod.	Low- Mod.	Mod.	Mod.
*Convertible Debt	Mod.	Mod.	Low- Mod.	Mod.	Low- Mod..	Mod.- High
*Credit Analysis	High	N.A.	High	High	Mod.	N.A.
Credit Cards	High	Low	High	Low	N.A.	Mod.
*Export-Import (EX-IM) Bank	Mod.	Mod.- High	Mod.- High	Mod- High	High	Mod.
Foundations: Program-Related Investments	Mod.	Low	Mod.	High	Mod.	Mod.
*Leasing	High	Low	High	Mod.	High	High
*Mezzanine Financing	High	High	Low- Mod.	Low- Mod.	High	High
Micro-Loan Funds	Low- Mod.	Low- Mod.	Mod.	High	Mod.	Mod.

COMPARISON MATRIX continued

Criteria/ Debt Tool	Actual Use	Revenue Size	Admini- strative Ease	Equity	Financial Leverag- ing	Environ- mental Benefits
National Cooperative Bank	Mod.- High	Mod.	Mod.	Mod. - High	Mod.	Mod.
National Credit Union Administra- tion: Community Development Revolving Loans	Mod.	Low - Mod.	High	Mod.	Mod.	Mod.
Receivables Factoring	Low	Low	Mod.	Low	Mod.	Mod.
*Surety Bonds	Low	Low	Mod.	Mod.	High	Mod.- High
Treasury: Community Development Financial Institutions	Low- Mod.	Low- Mod.	Mod.	Mod.- High	High	Mod.

High - High use (majority of States/small businesses); average credit over \$1 million per business; other criteria score high (e.g., creditors provide additional advice or assistance; easy to arrange; reasonable interest costs; highly leveraged and influences success/stability of small businesses)

Mod.- Moderate use (10-25 States/many small businesses); average credit \$500,000 - \$1 million per business; criteria score in medium range

Low- Low or rare use thus far; average credit under \$500,000 per business; one or more major implementation problems exist

*Star indicates good mechanism for future use