Appendix A.
Size and Configuration of Sports Fields

The size and configuration of a site and any accessible adjacent properties can have a major impact on the kinds of recreational use it can support. For example, a large, regularly shaped site may be well suited for a multiple athletic field complex (e.g., soccer or baseball). A smaller, irregularly shaped site may not be able to support this level of development and may be better used for smaller athletic fields or courts (e.g., basketball or tennis courts). In addition to the area requirements for the selected recreational activity, space may be needed for supporting facilities such as parking lots, concession stands, spectator areas, and storage buildings. At multiple athletic field complexes, space also may be needed for buffer zones between fields, drainage features, access areas and adjacent properties.

Exhibit A-1 provides standard field dimensions and acreage for common athletic fields. The area required for most playing fields ranges from approximately 0.05 acres (a volleyball court) to three acres (an adult level baseball field). However, recreational facilities consist of more than just a playing field. When estimating the area needs for a recreational facility, the size of the fields and the space requirements for supporting features or areas, such as those listed below, need to be considered.

- Parking
- Bathrooms
- Storage facilities
- Concession facilities
- Bleachers or other spectator areas
- Spillover noise and activity areas
- Surface drainage features
- Buffer zones
- Access areas
- Remedy criteria/layout (building, drainage, piping, etc.)

Exhibit A-1: Common Field Dimensions

Sport	Field Dimensions	Minimum Acreage
Field Hockey	100 yds x 60 yds	1.25
Lacrosse	119 yds x 69 yds	1.7
Football	120 yds x 53 yds	1.3
Tennis	78 ft x 36 ft	0.06
Softball	325-ft radial arc from backstop	2.0
Baseball	200-ft (little league) - 350-ft (adult) radial arc from backstop	0.75 - 3.0
Soccer	100+ yds x 60+ yds	1.0 - 2.0
Basketball	50 ft x 94 ft	0.01
Volleyball	29.5 ft x 59 ft	0.05
Golf Range (35 tees)	240 yds wide x 300 yds deep	15

Exhibit A-2 lists typical minimum parking needs for sports fields and the approximate area required for the parking spaces.

Exhibit A-2: Minimum Suggested Parking for Sports Fields

Sport	Minimum Parking Spaces	Approximate Area (Acres)
Softball	15 Spaces / Diamond	0.2
Baseball	20 Spaces / Diamond	0.27
Volleyball	6 Spaces / Court	0.08
Tennis	2 Spaces / Court	0.03
Basketball	6 Spaces / Court	0.08
Soccer, football, lacrosse, etc.	16 Spaces / Field	0.22

Source: Carpenter, *Handbook of Landscape Architectural Construction* (1976)

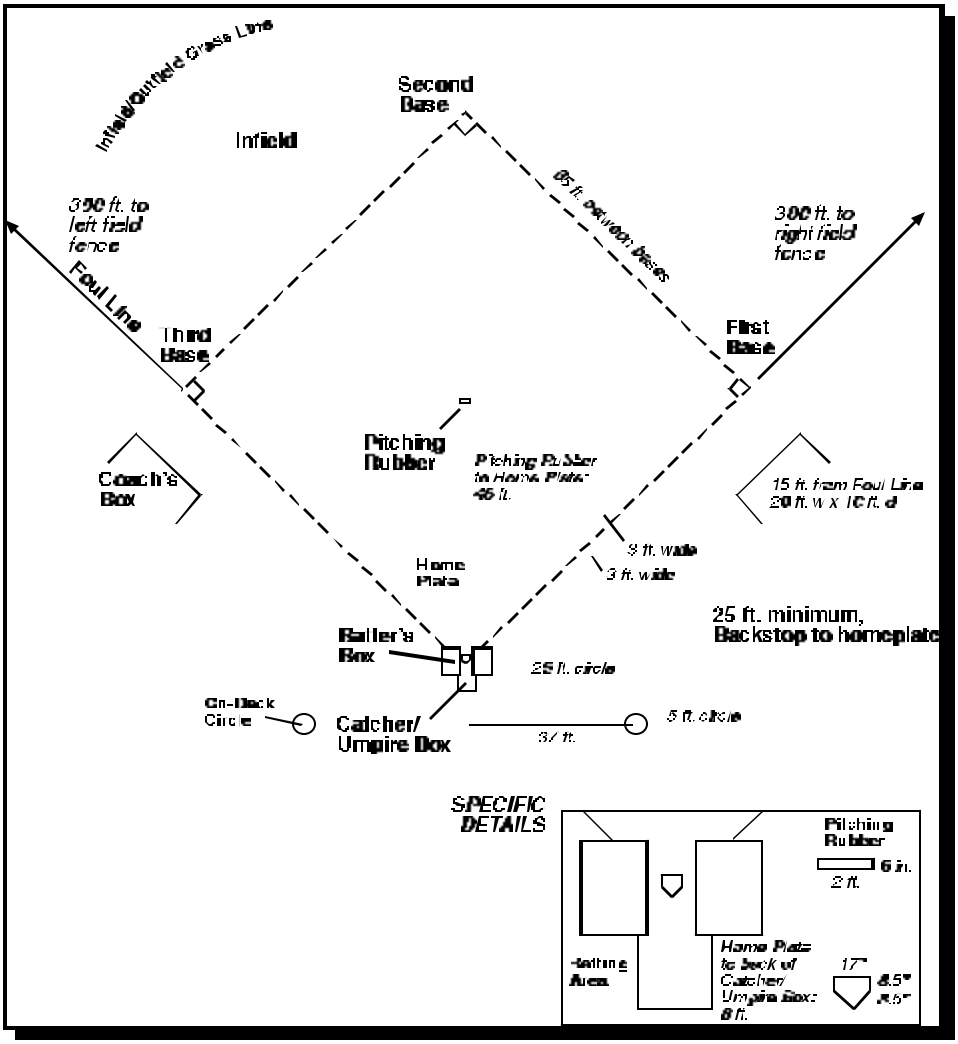
Softball and Baseball Fields

Field size varies from approximately three-quarters of an acre for a little league baseball field to approximately three acres for an adult baseball field with the center field fence 375-feet away from home plate. Accounting for additional space for errant balls, spectator areas, and other features, a full size baseball field may need up to six acres. **Exhibit A-3** lists the dimensions for little league baseball, adult baseball and softball fields and **Exhibit A-4** provides a typical diagram of a softball field.

Exhibit A-3 Baseball and Softball Field Dimensions

Standard Dimensions	Little League	Baseball (Adult)	Softball (Adult)
Length of Baseline	60'	90'	65'
Pitching Distance	46'	60'	46'
Batters Box	3' x 6'	4' x 6'	3' x 7'
Rise of Pitching Mound	6"	10"	none
Coaches Box	4' x 8'	10' x 20'	10' x 15'
Home Plate to Backstop	25'	60'	25'
Left Field Distance	200'	320'	300'
Center Field Distance	200'	350' - 375'	300'
Right Field Distance	200'	320'	300'
Infield Radius	50'	95'	-
Radius of Infield Mix Around Bases (for grass infields only)	9'	13'	-
Diameter Pitcher's Mound	10'	18'	-
Approximate Acreage	0.75	3	2

Exhibit A-4 Softball Field Diagram
(adapted from Pioneer Manufacturing Co.)



Soccer and Other Athletic Fields

Many large athletic fields can be used for multiple purposes and sports due to their similar sizes and dimensions. **Exhibit A-5** provides the field dimensions of typical sports fields. Football and soccer are two of the most popular sports and their field sizes are quite compatible for dual use. Typical football and soccer fields layouts are provided as **Exhibits A-6** and **A-7.** As noted earlier, the age and level of play is one factor to consider when determining the appropriate field size.

Exhibit A-5 Typical Sports Field Dimensions		
Sport	**Field Dimensions**	**Approximate Acreage**
Adult Soccer	110+ yards x 80 yards	1.8
Football	120 yards x 53 yards	1.3
Field Hockey	100 yards x 60 yards	1.3
Lacrosse	119 yards x 69 yards	1.7

Exhibit A-6 Football Field Diagram
(adapted from Pioneer Manufacturing Co.)

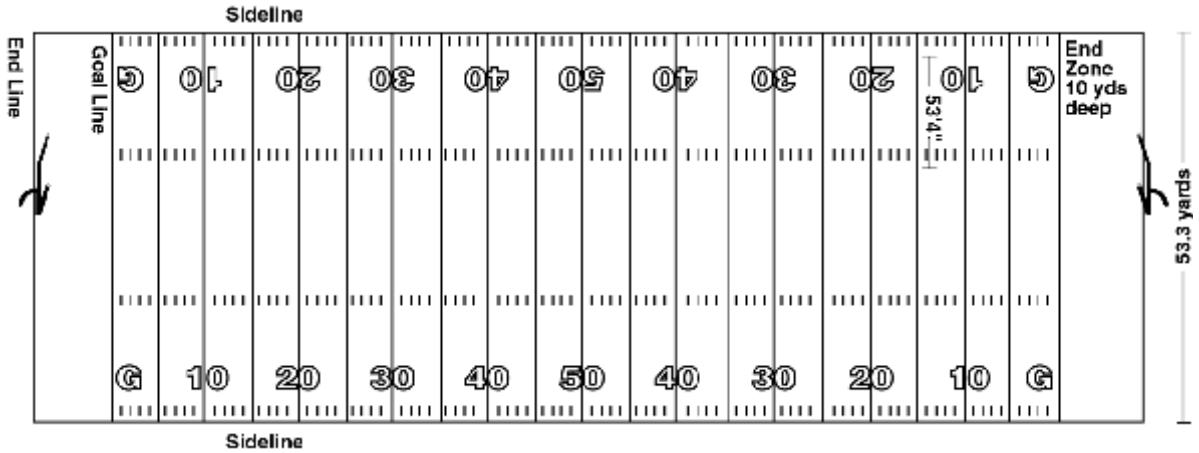
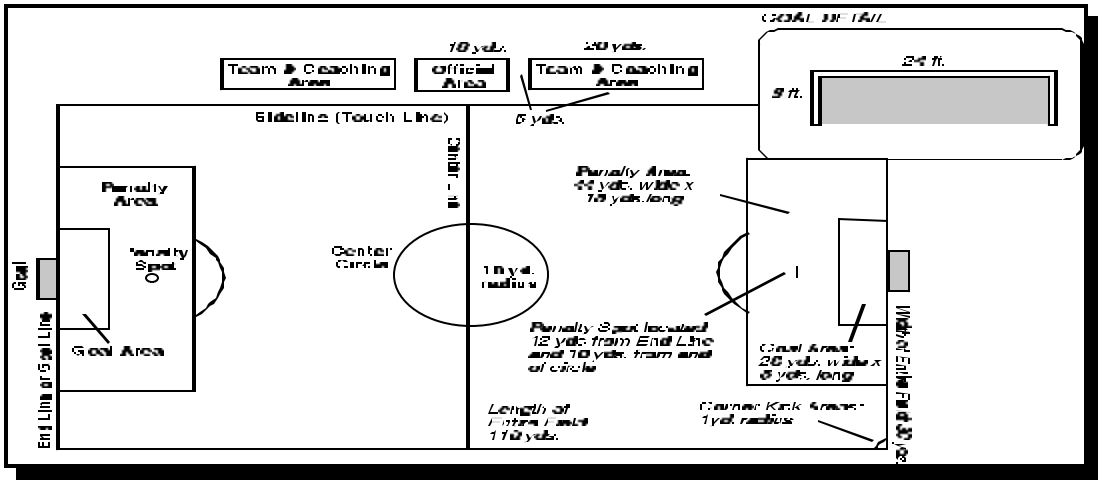


Exhibit A-7 Soccer Field Diagram
(adapted from Pioneer Manufacturing Co.)



Soccer fields vary greatly in size depending on the age and level of play. As shown in **Exhibit A-8**, a field for players age six and under is approximately 0.12 acres in area while a field for adults can require nearly two acres. Additional area is also required for spectator areas, bad shots and errant passes. An adult soccer field with supporting areas may need up to three acres of land.

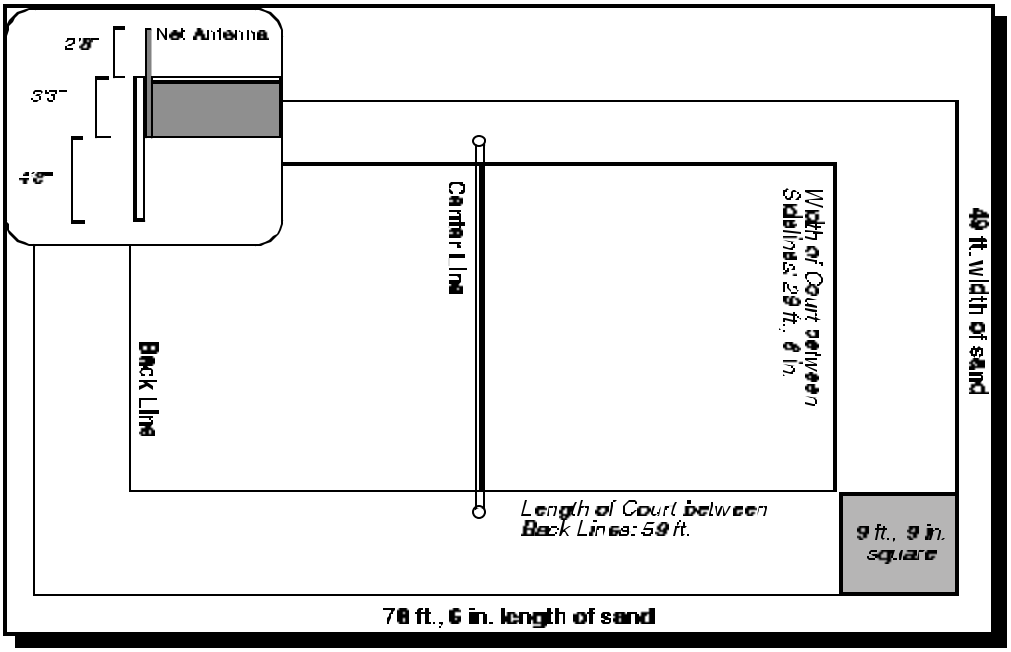
Exhibit A-8 Soccer Field Dimensions

Age/Level	Length (yds)	Width (yds)	Goal Width (yds)	Approx. Acreage
Under 6 (3 on 3)	20 - 30	15 - 20	6	0.1
Under 8 (4 on 4)	40 - 50	20 - 30	6	0.3
Under 8 (11 on 11)	80	60	8	1.0
Under 10	90	60	8	1.1
Under 12	100	60	8	1.2
Under 14	110	65	8	1.5
16 and over	110+	80	8	1.8

Sand Volleyball Court

A standard volley ball court is 29.5 feet by 59 feet, the sand area is 49 feet by 78.5 feet, and a 12 feet wide zone beyond the sand is typically allowed around the court for players to pursue the ball. The total required area is approximately 0.2 acres. Although sand thickness varies, a layer between 2 and 3.5 feet thick is preferred. Refer to **Exhibit A-9** for a diagram of a typical volleyball court.

Exhibit A-9 Volleyball Court Diagram
(adapted from Pioneer Manufacturing Co.)



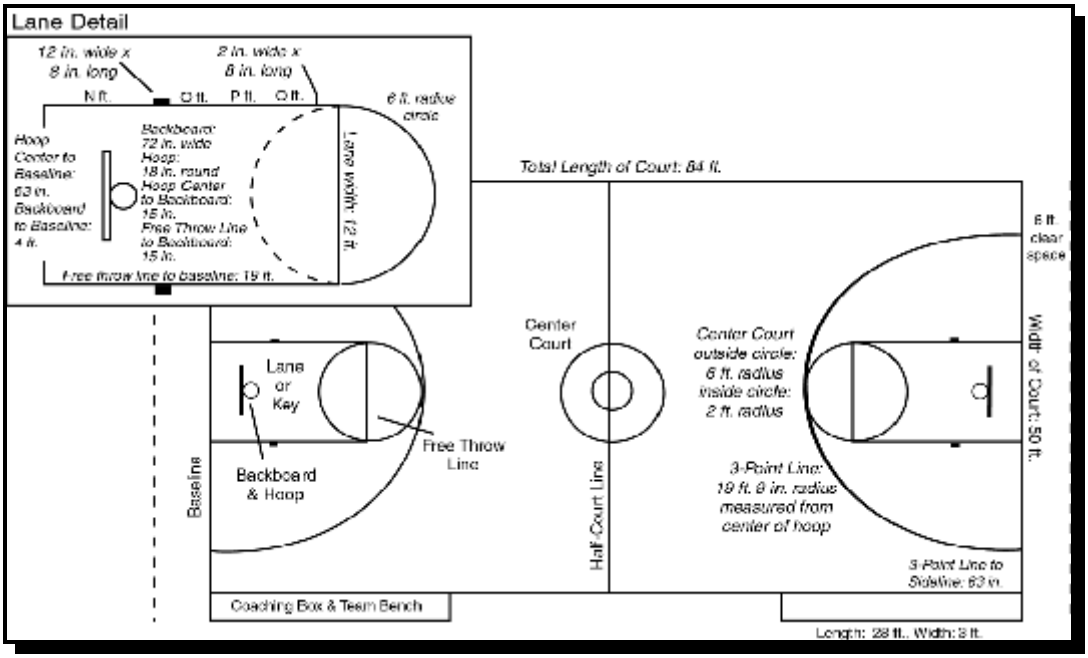
Basketball

Exhibit A-10 lists common dimensions and areas for basketball courts of different level of play. As shown in this table, basketball courts for the various levels are approximately the same size. A diagram of a typical basketball court is provided as **Exhibit A-11.**

Exhibit A-10 Basketball Court Dimensions

Level	High School	College	Professional
Size	50' x 84'	50' x 94'	50' x 94'
Distance from free throw line to backboard	15'	15'	15'
Width of free throw lane	12'	12'	16'
3-point arc distance (measured from center of hoop)	19' 9"	19' 9"	21' 9'
Approximate Acreage	0.1	0.11	0.11

Exhibit A-11 Basketball Court Diagram
(adapted from Pioneer Manufacturing Co.)



Appendix B.
Information Sources for Recreational Reuse

Sports Fields - General

- The book, *Stadia, Arenas and Grandstands,* by Jean Benedetti (2000) contains general information about designing and building sports fields.
- United States Department of the Army. "How to Plan, Design and Build Outdoor Sports Facilities." Sterling Publishing Co, IRC.: New York.
- *Sports Turf: Science, Construction and Maintenance* by V.I. Stewart
- For more information about the proper installation and care of turfgrass for sports fields, access the National Turfgrass Evaluation Program Internet Site at http://www.ntep.org .
- Prince William County, Virginia, Design Standards (1996), shows examples of sport field designs that have been implemented by Virginia's Prince William County.
- "Vigilance and Sound Advice Help Spell Relief from Landfill Gag," an article by Shapard, Rob (1996 page 22-28) published in *American City and County* describes dramatic change that can occur when a former toxic site is transformed into use as a recreational site.

Softball and Baseball Fields

- *Handbook of Sports and Recreational Building Design: Outdoor Sports* by John Geraint, (1993)
- For step-by-step instructions on how to develop land into sport fields, setting up drainage systems, and other helpful information about soil and turf maintenance access the Landco Company Internet site at http://www.lancoturf.com/cadre-sports.htm
- *Sports Fields: A Manual for Design, Construction, and Maintenance* by J. Puhalla (1999) Ann Arbor Press: Michigan.

Soccer

- Geraint, John. (1993). "Handbook of Sports and Recreational Building Design: Outdoor Sports," available through the Urban Land Institute.
- Soccer Industry Council of America. (1998). "Soccer Planning System: A Guide for

Community Soccer Center Management."

- Purdue Turf Grass Science Program internet site: http://www.agry.purdue.edu/turf/pubs/ay31.htm

Golf Driving Ranges

- *Guidelines for Planning and Developing a Public Golf Course,* National Golf Foundation (1995).
- "A Study of Designing/Reclaiming a Sanitary Landfill as a Future Golf Course: A Thesis," by Chiaojung Charles Yang (1993) Louisiana State University and Agricultural and Mechanical College.
- "Enhancing Golf and the Environment," by Jerry Matthews (1994) published in *Parks and Recreation*.
- U.S. Environmental Protection Agency. "Reusing Cleaned Up Superfund Sites: Use of Land Above Hazardous Waste Containment Areas for Golf Facilities" (Planned 2001).
- United States Golf Association internet site: http://www.usga.org/green/index.html
- The Lanco Company, Golf Course Construction internet site: http://www.lancoturf.com/golf1.htm

Volleyball Courts

- USA Volleyball Guidelines internet site: http://www.volleyball.org
- Volleyball Magazine Site Construction internet site: http://volleyball.about.com/sports/volleyball/cs/courtconstruction/index.htm

Playgrounds, Picnic Areas, and Trails

- "The Creation of a Park" by Karen Arent published in *Public Works* (1989).
- "The Complete Guide to Trail Building and Maintenance," by Carl Demrow and David Salisbury published in *Appalachian Mountain Club* (1998).
- "Today's Landfill is Tomorrow's Playground," by T. Naber published in *Waste Age* (1987, September, pages 46-58).

- "Landfills Become Landscapes: The American Park Revolution," by Dan Treadway published in *American City and County* (1987, September).

- U.S. Product Safety Commission, Office of Information and Public Affairs. "Handbook for Public Playground Safety." Publication no. 32.

Ice Skating

- *Ice Rink Design and Construction: A Bibliography of Recent Literature #a1997*, by Mary Ellen Huls (1998).

Horseback Riding

- *Equestrian Facilities: Planning and Design,* Alexander Bigler.

Paved Surfaces, Parking, Buildings, and Utilities

- "Handbook of Landscape Architectural Construction." J.D. Carpenter (1976). McLean, Virginia: Landscape Architecture Foundation.

- Prince William County, Virginia, Design Standards (1996).

- Smith, Roger. (1995-1996, Winter). "Asphalt Pavement Doubles as Hazardous Soils Cap and Loading Area." *Asphalt,* vol. 9, no. 3.

- U.S. Environmental Protection Agency. "Reusing Cleaned Up Superfund Sites: Use of Land Above Hazardous Waste Containment Areas for Commercial and Light Industrial Facilities" (Planned 2001).

Appendix C.
Superfund Recreational Reuse Sites and EPA Contacts

Table 1: Superfund Waste Containment Sites with Recreational Reuse

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
MULTIPLE RECREATIONAL USES				
Dupage County Landfill/Blackwell Forest Preserve Warrenville, IL	Picnic and camping areas, trails, a lake, a 120-ft sledding hill, and a soccer field	Municipal landfill including 2.2 million cubic yards of waste material	- Repairs and improvements to existing cap - Adding clay to needed areas - Enhancing surface drainage - Installing a leachate extraction and treatment system - Installing additional landfill gas venting - Long-term groundwater monitoring	Tim Prendiville (RPM) (312) 886-5122 prendiville.timothy@epa.gov
Tar Creek Ottawa County, OK	Picher Sports Complex with baseball field and playground	Lead, cadmium, zinc	- Excavation of lead-contaminated soil and replacement with clean fill - Institutional controls - Diversion and diking of inflow areas	Rafael Casanova (214) 665-7437 casanova.rafael@epa.gov
Ohio River Park Neville, PA	Sports-recreation center with 2 indoor ice-skating rinks, and other recreation facilities	Benzene, 2,4.6 Trichlorophenol, magnese, benzo (a) pyrene, dibenz (a,h) anthracene, beryllium, and mercury	- Capping of concentrated waste with a multilayer cap - Construct a landfill with a synthetic membrane cover - Install extraction and injection wells within landfill	Romuald A. Roman (215) 814-3212 roman.romuald@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
ATHLETIC FIELDS				
American Cyanamid Company Bound Brook, NJ	Minor league baseball	VOCs, acetone, ethylbenzene chloride, toluene, and xylene, copper, chromium, lead, mercury, nickel, zinc, arsenic, and cadium	- Contain the contaminants	Jeff Catanzarita (RPM) (212) 637-4409 catanzarita.jeff@epa.gov
Chisman Creek Seaford, VA	2 softball fields and 4 soccer fields	Fly ash including trace metals, inorganics, arsenic, cadmium, copper, lead, nickel, vanadium.	- Low-permeability soil cap - Ground water collection system and treatment system - Alternate water supply for those homes still on residential wells - Relocating a portion of the tributary, deed restrictions	Andrew C. Palestini (RPM) (215) 814-3233 palestini.andrew@epa.gov
East Mt. Zion Landfill Springettsbury Township, PA	Baseball fields	Municipal and industrial wastes, including vinyl chloride and benzene	- Multilayered cap - Vent system - Surface water control system	John Banks (RPM) (215) 814-3214 banks.john-d@epa.gov
International Minerals Company Terre Haute, IN	Little-league ball fields	VOCs and BHC	- Placing a clay cap and a fence around the site - Continually monitor the site	Gladys Beard (312) 886-7253 beard.gladys@epa.gov
Lipari Landfill Pitman, NJ	Baseball and soccer fields	Solvent, paint, paint thinner, formaldehyde, and resins	- Security fence - Construction of a landfill containment system - Capping of the landfill with a synthetic membrane cover - Installation of extraction and injection wells within the landfill	Fred Cataneo (212) 637-4428 cataneo.fred@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
Silver Bow Creek/Butte/ Silver Bow Deer Lodge Country, MT	Baseball, soccer, tennis, hiking, and basketball areas	Mining wastes including metals, arsenic, and lead	- Construction of a cover of lime, fill and soil - Removal of hazardous materials	Sara Weinstock (RPM) (406) 782-7415 weinstock.sara@epa.gov
Silver Bow Creek/Butte Area (Clark Tailings)/ Silver Bow Deer Lodge County, MT	Baseball fields, courts, and picnic areas	Metals including, arsenic, lead, copper, zinc, and cadmium	- Stabilization of soil containing lead - Covering the site with 18 inches of clean soil	Sara Weinstock (RPM) (406) 782-7415 weinstock.sara@epa.gov
GOLF COURSES / DRIVING RANGES				
Anaconda Company Smelter Anaconda, MT	Golf course	Arsenic, metals including copper, cadmium, lead, and zinc	- Relocated residents - Removal of contaminated soil and placement of clean soil	Charles Coleman (612) 296-7813 coleman.charles@epa.gov
Kane and Lombard Streets Drum Baltimore, MD	Golf driving range	VOCs and metals including cadmium, lead, magnesium, nickel	- Constructed a surface barrier wall - Constructed a permeant cap	Lesley Derascavage (215) 814-3239 derascavage.lesley@epa.gov
Lexington County Landfill Cayce, SC	Golf driving range	Benzene, bisphthlate bromodichloro-methane, and chlorobenzene	- Consolidation and capping the waste piles with clay and soil - Control the venting of the methane gas	Terry Tanner (904) 562-8797 tanner.terry@epa.gov
McColl Fullerton, CA	Golf course	Sulfur dioxide, VOCs, inorganic chemicals, volatile, and semi-volatile compounds	- Removal of wastes - Temporary caps placed	David Seter (415) 744-2212 seter.david@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
Mill Creek Dump Erie, PA	Golf course	Polycyclic aromatic hydrocarbons, PCBs, and heavy metals	- Removal of material - Soil cap - Flood retention basin	Romuald A. Roman (215) 814-3212 roman.romuald@epa.gov
Monticello Mill Tailing Monticello, UT	Golf course	Uranium, thorium-230, radium 226, radon 222, heavy metals including arsenic, selemum, vanadium, molybdenum, manganese, and uranium	- Removal of contaminated material - Place an evapo-transpiration cover on site	Paul Mushovic (303) 312-6662 mushovic.paul@epa.gov
PAB Oil and Chemical Services, Inc., Abbeville, LA	Golf driving range	Arsenic, barium, chromium, lead, manganese, and acetone	- Remove top layer or soil - Install a clay cap	Caroline A. Siegler (214) 665-2178
South Weymouth Naval Air Station (SWNAS) Weymouth, MA	Golf course and recreational and open space	Battery acid, lead, VOCs, and heavy metals	- Removal of drums and containers - Removal of soil - Place soil cap on surface	Patty Whittemore (617) 918-1382 whittemore.patty@epa.gov
Stauffer Chemical Tarpon Springs, FL	Golf course	Phosphorous, arsenic, radium-226, beryllium, and heavy metals	- Removal of hazardous material and soil - Consolidation and capping of the site - Establish land use ordinances - Construct physical barriers	John Blanchard (404) 562-8934 blanchard.john@epamail.gov
PARKS AND RECREATION AREAS				

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
Bangor Gas Works Bangor, ME	Community park	Coal tar	- Emptied tank and demolished buildings - Built cap and paved over as a parking lot	Don Berger (617) 918-1351 berger.don@epa.gov
Central City-Clear Creek Central City, CO	Outdoor recreation	Zinc, lead, cadmium, and arsenic	- Build a water treatment plan - Remove and cap waste files	Holly Fliniau (303) 312-6535 fliniau.holly@ epa.gov
Chemical Metals Industries Baltimore, MD	Neighborhood parks	DCE, TCE, and PCEs	- Remove the deteriorating asphalt - Recap and remove any contaminants that surface	Stephen D. Jarvela (215) 814-3259 jarvela.stephen@ epa.gov
Port Hadlock **(US NAVY)** Indian Island, WA	Recreational beach	Ordnance compounds, heavy metals, PCBs, and pesticides	- Removal of debris - Construction of a landfill/erosion prevention measures	Bob Kievit (RPM) (360) 753-9014 kievit.bob@epa.gov
PATHS AND TRAILS				
Bunker Hill Mining Smelterville, ID	Hiking trails and ski area	Lead, arsenic, and cadmium	- Cap and close area deemed unacceptable	Earl Liverman (208) 664-4858 liverman.earl@epa.gov
Fulbright Landfill Springfield, MO	Walking trails	Landfill wastes including cyanides, acids, plating, paint sledges, solvents and pesticides	- Removal of drums and drum remnants - Monitoring groundwater and leachate - Institutional controls	Mary Peterson (RPM) (913) 551-7882 peterson.mary@epa.gov
Milltown Reservoir Milltown, MT	Walking trails including a foot bridge	Heavy metals and arsenic	- Dig new well from separate aquifer - Construct new distribution system - Flush current plumbing system - Continually test water quality	Russ Forba (406) 441-1123 forba.russ@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
Northwest 58th Street Landfill Miami, FL	Hiking trails	Pesticides, paints, solvents, heavy metals, arsenic, and VOCs	- Grade and cap landfill with synthetic membranes - Construct a storm water management system	Pam Scully (404) 562-8935 scully.pam@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
OTHER				
Asarco Smelter Tacoma, WA	Amphitheater	Metals, arsenic, cadium, copper, and lead	- Demolish building - Remove and disposal of soil - Plug/abandon surface water - Cap area - Reinforce the shoreline of the plant site and slag peninsula against erosion - Long term monitoring	Kevin Rochlin (206) 553-2106 rochlin.kevin@epa.gov
Smuggler Mountain Aspen, CO	Homes and historic tour service	Lead	- Install a clean soil cap	Armando Saenz (303) 312-6559 saenz.armando@epa.gov
Whitewood Creek Whitewood, SD	Creek used for irrigation, watering livestock, and recreation	Heavy metals, arsenic, cadmium, copper, silver, mercury, and cyanide	- Remove soil - Monitoring water quality - Limit future uses of contaminated areas	Gwen Hooten (303) 312-6646 hooten.gwen@epa.gov

Table 2: Superfund Treatment Sites with Recreational Reuse

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
MULTIPLE RECREATIONAL USES				
Abex Portsmouth, VA	Recreation center	Heavy metal, lead, antimony, nickel, tin, copper, zinc, cadmium, chromium, silver, and PAHs	- Removal of soils - Fenced off areas of the site	Randy Sturgeon (215) 814-3227 sturgeon.randy@epa.gov
Bayou Bonfouca Slidell, LA	Boat landing and recreational area	Creosote compounds and PNA	- Dredging contaminated sediments - Incineration of soils and sediments extraction - Treatment of groundwater	Katrina Coltrain (214) 665-8143 coltrain.katrina@epa.gov
Peterson Sand & Gravel Liberytville, IL	Boat launch, canoes, picnic area, swimming beach, and hiking trails	Industrial waste including solvents and paints	- Removal of toxic drums and contaminated soil	Gladys Beard (RPM) (312) 886-7253 beard.gladys@epa.gov
Pepe Field Boonton, NJ	Restored recreation facility with a regulation little league field, walking path, playground, basketball court, gazebo, flag pole area and concession stand	High levels of hydrogen sulfide waste	- Stabilization and excavation of approximately 50,000 cubic yards of waste material - Pumping and pre-treatment of leachate before discharge to the Rockaway Valley Regional Sewerage Authority - Backfilling of waste	John Frisco (212) 637-4419 frisco.john@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
ATHLETIC FIELDS				
East Helena East Helena, MT	Baseball fields	Lead, arsenic, and cadmium	- Remove soil - Isolating the processed water from ground water by constructing steel storage tanks and replacing the leaky equipment	Scott Brown (406) 441-1123 brown.scott@epa.gov
Reilly Tar&Chem (St. Louis Park Plant) Hennepin, MN	Soccer field and a park	Wood preserving wastes including creosote, coal tar, and polynuclear aromatic hydrocarbons	- Groundwater wells closed - Groundwater treatment	Darryl Owens (RPM) (312) 886-7089 owens.darryl@epa.gov
Spokane Junkyard Spokane, WA	Baseball field, softball field, 3 regulation-sized soccer fields, and 8 smaller soccer fields	Asbestos, oil containing PCBs, lead, and VOCs	- Removal and off site disposal of drums, solids, and asbestos	Paul Crutchfield, Assistant Director of Parks, Spokane (509) 625-6455. Kevin Rochlin (RPM) (206) 553-2106 rochlin.kevin@epa.gov
Waite Park Wells Waite Park, MN	Little league baseball fields	TCE, PCE, lead, heavy metals, and VOCs	- Removal of contaminated soil - Setting up a groundwater monitoring plan	Brenda Winkler (612) 296-7813
GOLF COURSES / DRIVING RANGES				
Gratiot County Golf St. Louis, MI	Golf course	Industrial waste including DDT, VOCs, heavy metals, and benzene	- Removal of contaminated soils - Groundwater treatment.	Rosita Clarke-Moreno (RPM) (312) 886-7251 clarkemoreno.rosita@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
Roebling Steel Company Site Roebling, NJ	Driving range and park	Compressed gas tanks, numerous types of acids, and solid wastes	- Construction of a cover of lime, fill, and soil - Removal of contaminated soil	Site Repository Florence Township, 711 Broad Street, Florence, NJ 08518 (609) 499-2525
PARKS AND RECREATION AREAS				
Westline Site Westline, PA	Recreational area	VOCs and PAH	- Soil excavation - Cover graded area with clean fill and seeded mulch	Roy Schrock (215) 814-3210 schrock.roy@epa.gov
PATHS AND TRAILS				
DeRewal Chemical Company Kingwood Township, NJ	Bike path	Cadmium, chromium, copper, lead, VOCs, and polycyclic aromatic hydrocarbons	- Remove contaminated soil - On-site treatment of soil	Larry Granite (212) 637-4423 granite.larry@epa.gov
French, Ltd. Crosby, TX	Nature walks and fishing	VOCs, phenols, heavy metals, and PCB	- Groundwater extraction - Place sheet pile wall around part of the site - On-site treatment of soil with in-situ biodegration	Ernest Franke (214) 665-8521 franke.ernest@epa.gov
Time Beach Site Times Beach, MO	Horse back riding	Dioxin	- Construction of a series of spur levees - Removal and treatment of contaminated soil	Bob Feild (913) 551-7697 feild.robert@epa.gov

Site Name/Location	Recreational Uses	Primary Contaminants	Remedial Activities	EPA Contact
OTHER				
Army Materials Technological Laboratory Watertown, MA	Yacht club	PAH's, PCB's, pesticides, and various chemical and radiological contamination	- Removal of hazardous material and soil - Decommissioning of the nuclear reactor	Meghan Cassidy (RPM) (617) 918-1387 cassidy.meghan@epa.gov