INDEX

A
Aalborg Portland, 69
Absolute auditory threshold, 370f
Absorption ratios, slag type comparison, 64f
Acid rain (acidic precipitation), 319–320
control measures, 320
impact, 320
Activated carbon, usage, 358
Activated-carbon adsorption bed, life (reduction), 358
Adhesive materials, expense, 17
Adjacent barriers, usage, 381
Administrative hearing letter, 116f
Administrative plan implementation actions, prerogative, 446–447
Adsorbers, 358
Adsorption, process, 358
Advanced direct waste recycling industry, inclusion, 66
Aerated static pile, composting, 232
process, 234–235
Aeration. See Forced aeration
composting factor, 26
Aerobic composting process, design considerations, 237t
Aerobic fermentation process, 25–26. See also Anaerobic fermentation process
Aerosol collection equipment, operating principles, 351
Aerosols, inertial entrapment, 351
Aesthetic factors grouping, 517t–518t
African countries, industry classifications, 2
Agglomerate marble, 51
Agglomeration machine, 15f
Aggregates, elasticity (modulus), 49
Air change, measurement, 149
Air circulation
levels, 334–335
organized circulations, 335
Air composition, 310t
Air contaminants, 141
production, 361
Air cooling rate. See Warm dry air
Air flow, turbulence (impact), 336
Air infiltration, reduction, 148
Air layer, instability, 337
Air monitoring
data, usage, 327
updates, 360
Air motion, 334
order of importance, 334
Air opacity, 326
Air parcels, vertical motion/displacement, 336–337
Air pollutants. See Hazardous air pollutants; Indoor air behavior, 333
concentration, 334–335
model, accuracy, 362–363
plume diffusion, meteorological conditions (impact), 358–359
types, 325
wind speed, impact, 336f
Air pollution, 309–310
aesthetic/climatic impact, 315–320
analyses, 341–342
carbon monoxide, contribution, 322t
concentration data, 362–363
control equipment
Air pollution (Continued)
design, 351
requirement. See Incinerators
controls, 347–363
achievement, 350
dilution, stack height (impact), 358–360
direct impact, observation, 333
economic impact, 311–320
effects (minimization), steps (WHO
Expect Committee
recommendations), 360–361
emission inventory, data, 341
environmental factors, 333–340
episodes, 311
list, 312t–313t
health impact, 310–311
impact. See Animals; Plants
interference, absence, 473
inventory, 340
lead, contribution, 324t
manmade sources, 321
mathematical models, 341
measurement, 326–333
meteorological data, 362
model, accuracy, 362–363
natural sources, 321, 324–325
nitrogen oxides, contribution, 322t
organization/staffing, 365
particulates, range, 321
planning/zoning, 360–361
PM2.5, contribution, 324t
PM10, contribution, 323t
program/enforcement, 363–367
information, 363–364
regulation/administration, 365, 367
sampling, 326–333, 341
short-term/long-term objectives/priorities, 341–342
source control, 347–351
source emission data, 362
sources/types, 320–325
standards, 275
studies, 341–342
implementation, proposal, 363–364
sulfur dioxide, contribution, 323t
surveys, 340–342
U.S. source/type, 322t–324t
VOCs, contribution, 322t–323t
Air quality. See Indoor air
maintenance, 360
modeling, 361–363
models, categorization, 361
monitoring system, 327
parameters, 520t–521t
measurement methods. See Ambient
air
public/private agencies, working
relationships/memoranda of
agreements (development), 367
real-time data, 327
standards. See Hospitals; Nursing homes
Air Quality Act of 1967, 342
Air resources management functional
organization chart, 366t
Air sampling
devices, usage, 326
sites, 341
Air zoning, air quality standards, 360
Airborne exposure limit, OSHA limit, 145
Air-cooled slag, cutting, 69
Alexandria National Iron and Steel
Company, slag study, 61–62
Alkyds, 9
Ambient air
federal standards, 342–345
particulate sampling, 327–328
quality
improvement, CAA (impact), 345
parameters, measurement methods, 326t
standards, 342–347
sedimentation/settling devices, usage, 328
TSP measurement, 328
Ambient noise, 369
American Conference of Governmental
Hygienists, sound pressure
recommendations, 384
American National Standards Institute
(ANSI) specifications, 377
American Public Health Association
(APHA)
appraisal items, 92t
appraisal method. See Quality of living
application, 95
development, 91
basic deficiencies of dwellings, 93t
Committee on the Hygiene of Housing, health criteria, 99–103
environmental survey, standard penalty scores, 94t–95t
housing quality scores, 95t
maximum standard penalty scores, 92t
American Society of Civil Engineers surveying/mapping division, 395
urban planning development division, 429
American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE), comfort zone description, 147
American University in Cairo (AUC), cradle-to-cradle approach, 7
Anaerobic fermentation process, 29
Animals
air pollution, impact, 315
wastes, collection, 195
ANSI. See American National Standards Institute
Apartments, dirt, 126
APHA. See American Public Health Association
Area landfill, 249f
Area method. See Sanitary landfill
Area-type landfill, geomembrane liner (placement), 255f
Ash monofill waste landfill liner configuration, 256f
Ash residue, 178
Asian countries, industry classifications, 2
Asnaes Power Station, fish farm, 69
Asphalt concrete containing slag, Marshall Test, 62t
Asphalt mixtures, 39
Assembly/examination phase, sand molding process, 53
Atmosphere, stability/instability, 336–337
Atmospheric vacuum breaker, 136f
Atomic Energy Act, 293, 296
Atomic spectrometry, usage, 330
Attic, refuse (presence), 125
AUC. See American University in Cairo
Automatic (tape) smoke sampler, usage, 328
Automobile catalytic converters, impact, 325
Average transmission coefficient. See Sound

B
Backflow prevention, 134–137
Background noise, 378
correction, 379
Baghouse filters, 352–353
diagram, 354f
Ball mill machine, 15f
usage, 16
Bangalore composting, 236
Base road pavement layer, usage, 39
Basic oxygen furnace (BOF)
dust/sludge, generation, 57
fume formation, reduction, 63
slag
management, 59
production, 57
stockpiles, 58
study, 61
usage, 56
Basic Principles of Healthful Housing (APHA), 99
Bell, Alexander Graham, 370
Bench marks, 403
BF. See Blast furnace
Biodegradable material, 178
Biogas
applications, 31
total energy source uses, 30t
Biological contaminants
health effects, 140–141
sources, 141
Bioreactor type landfill, leachate recirculation, 257f
Blast furnace (BF)
dust/sludge, generation, 57
usage, 56
BOF. See Basic oxygen furnace
Bonded marble, example, 52f
Bottle law. See Returnable bottle deposit law
Bottom ash, disposal, 287, 289
Bricks
development, 17, 19
photo, 19f
tiles, compositions, 46t
Buffalo (New York), population trends, 84f
Buildings
  acid rain, impact, 320
  code, 445
  department letters, landlord seizures, 113
  hot water demands/use, 134t
  location, 478
    land use, 472
    roads, access, 475–476
Bulldozer. See Tracked bulldozer
  blade, usage. See Crawler tractor
C
CAA. See Clean Air Act
Cadastral maps. See Large-scale cadastral maps
  usage, 471
Candida spp., impact, 156
Canyon landfill, 249f
Capacity ranges. See Materials recovery facility
Capital improvement program
  completion/adoption, 467
  preparation, 446
  usage, 445–446
Carbon dioxide
  impact. See Global warming release, 319
Carbon monoxide
  infrared (IR) analyzer, usage, 331
    NAAQS, 343
Carbon tetrachloride, phaseout, 346
Carbon to nitrogen ratio, composting factor, 26
Cascade impactor, usage, 329
Cast marble, 51
Casting resin, 51
Catalytic afterburners, 357
Categorical exclusion, term (usage), 507
Cathode-ray oscillograph, usage. See Noise
Celestial observation, 398
Cellar occupancy, unlawfulness, 127
Cement
  bypass dust
    alkalinity levels, 38
    chemical analysis, 33f
    disposal, 33
    environmental/socioeconomic benefits, 39–40
chemical combinations, 31
  cleaner production, natural resources (usage), 34
  dry production, 32
  industrial ecology approach, 34–36
  industry, 31–40
  kilns, usage, 32
  natural stone slurry, incorporation, 45
  passive composting technique, 38
  process routes, 31–32
  production
    emissions, 32
    process, 31–32
    techniques, core element, 33–34
recycling
  glass/ceramic glass, usage, 37
  opportunities, 36
  road pavement layers, usage, 39
  sewage sludge, composting, 37–38
  tiles/bricks/interlocks, usage, 37–39
  utilization, production techniques, 33–34
wastes
  exchange, recycling, 69
  treatment/disposal, 33
  usage, 38–39
  wet production, 32
Cement kiln dust (CKD), 32–33
  addition, 65
  collection, 33
Cement-based products, 50
Census data, 96
Centralized electric power, availability, 475
Centrifugal collection equipment, 328
Centrifugal scrubber, 355
Centrifugal wash collector, 356f
Ceramic glass, usage. See Cement
Certificate of occupancy, requirement, 118
CFCs. See Chlorofluorocarbons
Chemical additives, usage, 26
Chemical Emergency Center (CHEMTREC), operation, 301
Chemical recycling, 10
Chemical resistance
  properties, determination, 73–74
  test, 73–74
Chemical Safety Information, Site Security and Fuels Regulatory Relief Act, 494
CHEMTREC. See Chemical Emergency Center
Chinese fixed dome, 29
digester, 29f
Chloramines, impact, 157, 159
Chlorobenzenes, organics, 351
Chlorofluorocarbons (CFCs)
impact, 318–319. See also Ozone phaseout, 346
stratosphere existence, 318
Chlorophenols, organics, 351
Circular covers, movement, 21
City planning
rational process, 429–430
usage, 431
CKD. See Cement kiln dust
Clark Spheroid of 1866, 398, 404
Class I compost, metal concentrations (maximum), 230t
Class II compost, metal concentrations (maximum), 230t
Clean Air Act (CAA), 293, 295, 342, 495
amendments, 343
usage, 346
cost/benefit, EPA assessment, 311, 314
mean values, 314
Title IV, 345–346
Title V–XI, 346
Titles I–III, 345
usage, 345–346
Clean dry air, composition, 310t
Clean Water Act, 293, 295, 495
Cleaning/inspection, sand molding process, 53
Climate Change 2001, 217
Closed container, stationary compactor (connection), 200f
Cloth screen filters, 352–353
Cluster subdivision, advantages, 490
Coal
burning, reductions (necessity), 317
coke transformation, 56
source reduction, 320
Code of Federal Regulations, Title 40, Parts 257–258, 242
Coefficient of haze (COH), tape sampler (usage), 332
Collection. See Solid waste containers, examples, 203f
systems, container types/capacities (data), 205t
vehicles application. See Manual loading collection vehicles examples, 203f. See also Commingled solid waste; Front-loaded collection vehicle; Mechanically loaded collection vehicles Collector-driver, usage, 204
Colleges, sanitation, 163
Combined direct-load/discharge load solid waste transfer stations, development, 210
Combustible hydrocarbons, impurities, 325
Combustion, 279. See also Waste-to-energy combustion chamber
gases, exit, 282
temperature monitoring, 286
esentials, 281–282
particulate emissions, 287
products/residues, 281–283
residues, 283
time/temperature/turbulence, impact, 281
units. See Modular combustion units
Combustors, 283–287. See also Mass-fired combustors; Refuse derived fuel
Comfort zones, 147
Commercial discount store, drop boxes (usage), 204f
Commercial noise, 377
Commercial solid waste containers, usage, 200f
handling/storage, 199
placement, manual collection (example), 201f
Commercial waste, 178
contamination, 189
Commingled solid waste MRF, usage, 218
examples, 219t–220t
rear-loaded collection vehicle, example, 206f
side-loaded right-hand standup drive collection vehicle, example, 206f
Community development objectives/goals, 467
fiscal stability, 481
physical development, plan, 436
planning, environmental health considerations, 503
sanitary landfills, leachate, 252
solid waste, sources, 186t
zoning ordinances, 482
Community facilities, 101–102
comprehensive plan requirement, 441
plan component, 434
plan element, 435
Compaction equipment, 272f
Completed landfill, use, 278–279
Composite material
maximum flexural load, 73f
tensile strengths, 82f
Composite pavement base material,
steel-making/BG slag combination (usage), 60–61
Compost
aeration, machine (usage), 234f
chemicals, presence, 240
definition, concepts/objectives, 230
metal concentrations, maximum. See
Class I compost; Class II compost
microbial activity, 238
odor control, 238–239
operational considerations, 236–239
organic material,
decomposition/stabilization, 231
pathogen control, 236, 238
pesticides/heavy metals/pathogens, toxic levels (determination/evaluation), 229–230
pile, schematic. See Static aerated compost pile
postprocessing, 232
preprocessing, 231
process design, 236–239
product quality, 241
salmonella repopulation, 238
temperature, WHO recommendation, 238
uses/constraints, 229–230
Composting, 178. See also Natural composting; Passive composting; Vermi composting
applications, 226
biological odor management, 240
cost, 241–242
discussion, 225–242
facilities
implementation, issues, 239–240
odor production, 239
public health issues, 240
siting, 239
factors, 26
growth, 182
health hazard, 240–241
market analysis, 241–242
mechanical systems, 235–236
operation. See Windrow composting
heavy metal toxicity, 241–242
perception/usage, 182–183
process, 25, 230–232
design/operation, 239–240
diagram, 25f
steps, 231–232
systems, function/reactor configuration.
See Municipal composting systems
technologies, 232
discussion, 236
time, determination. See Total composting time
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 293, 295, 495
air quality issues, 343, 345
Comprehensive plan, 433–437
preparation process, 437f
preparation requirements, 439–443
public health element, 497–502
public participation, 465–466
Comprehensive planning
alternatives, development/evaluation, 444
development requirements, identification, 443–444
implementation, policy development (relationship), 445–447
inventory analysis, 438–443
objectives/standards, formulation, 443
process, 437–447
continuing nature, 466–467
value, 467
public participation process, 444
Comprehensive public planning, 469–470
Concrete
  compressive strength, 48–49
  elasticity, modulus, 49–50
  ground granulated BF slag, usage, 60
  marble slurry, usage, 47–50
  mix properties, 48t
  tensile strength, 49
Condensers, usage, 357–358
Conformal, term (usage/meaning), 401
Conformal projection, properties, 401
Conic projection, creation (concepts), 400f
Construction debris, 192–194
Consumer Products Safety Commission (CPSC), 296
Contagious diseases, containment, 497
Container types/capacities, data, 205t
Contaminants, 141–147. See also Air contaminants; Biological contaminants precipitation, 351
  separation, 223f
Contaminated water, backflow, 134
Continuous slag granulation system, 59f
Control survey, 409–410
  network, 409
  system, adoption, 409
Cork industry, 22–24
  cradle-to-cradle concept, process flow diagram, 23f
Correctional institutions
  food service sanitation, improvement, 165
  overcrowding, elimination, 165
  sanitation, 163–167
  ventilation, usage, 149
Corridor planning stage, insertion. See Public infrastructure development projects
Cost internalization, 181
Cover material, usage. See Surface water CPSC. See Consumer Products Safety Commission
Cradle-to-grave approach. See American University in Cairo sustainability indicator, 65
Cradle-to-grave concept, 4
  importance, 4–7
  material manufacture/recovery, 7
  usage, 36
Cradle-to-grave principles, adoption, 7
Cradle-to-grave approach, shift (proposal), 6
Cradle-to-grave concept, 3–4
  flowchart, 4f
  usage. See Sustainable development
Crawler tractor, bulldozer blade (usage), 269
Cumulative impact, term (usage), 507
Curbside collection
  labor requirements, 209t
  service, 198
Curvilinear subdivision
  design, 488–489
  grading, 489
  layout, 488f
Cyclones
  dust flow, 352
  separator, diagram, 353f
  spiraling movement, 352
D
Dano composting, 236
Day-care centers, sanitation, 169
Day-Night Average Sound Level (DNL) system, 375
Decent home environment, 83
  realization, 83
Decibel (dB), 370. See also Sound
Demographics
  comprehensive plan requirement, 439
  plan component, 433
Demolition debris, 192–194
Densified RDF (d-RDF), costliness, 284
Department of Public Works, jurisdiction, 105–106
Design noise level-land use relationships, 386
Deterioration, first sign. See Housing
Development plans, requirements
  anticipation, 443–444
Development requirements, identification. See Comprehensive planning
Dichlorodifluoromethane (Freon), CFC source, 318
Direct astronomic observation, 396
Direct discharge solid waste transfer station
  definition sketch, 213f
  stationary compactors, inclusion, 214f
Direct effects, cause, 507
Direct load solid waste transfer stations, 210–211
  uncompacted wastes, hauling (acceptance), 211
Direct reduction, 55
  method, 56
Direct waste recycling industry, 65, 66
  flowchart, 66f
DNL. See Day-Night Average Sound Level
Domestic wastewater, RCRA regulations (absence), 293
Double separated wall, usage, 383
Double-bottom composite liner system, 254f
Drag line, 270f
  suitability. See Trenches
Drainage area tributary, runoff (determination), 263
Drainage survey, 474–475
d-RDF. See Densified RDF
Drinking water, radon level (EPA proposal), 143
Drop boxes, usage, 204f
Dry adiabatic process lapse rate, 337
Dry scrubber technology, 356
Dry slag granulation, 60f
Dry slurry, atmospheric diffusion, 45
Duct injection technology, 356
Dust emission
  impact, 32
  reduction/control, 33
Dust flow. See Cyclones
Dwellings
  basic deficiencies (APHA), 93t
  survey, example, 98f

E

EAF. See Electrical arc furnace
Earth
  curvature, 399
  mover, 270f
  surface, features (location), 396
  topographic surface, 396
  geoid/reference ellipsoid, relationship, 397f
  warming, UV radiation (impact), 316
Earth cover
  leachate/methane control, 265–266
  recommendation, 266–267
EBICs. See Environmentally balanced industrial complexes
Eco-industrial parks
  concept, 6–7
  recognition, 35–36
Ecological factors grouping, 517t–518t
Economic base
  comprehensive plan requirement, 439
  plan component, 433
EEC. See European Economic Community
Effects, term (usage), 507
Egypt
  iron/steel waste materials, generation, 58t
  marble/granite deposits, 40–41
  slag cement, problems, 58
EIS. See Environmental impact statement
Eisenia Foetida. See Red wiggler
Ejector venturis, 355
Elasticity, modulus. See Concrete; Mortars
Electric power generation, proposal, 476
Electrical arc furnace (EAF), 56
  dust, zinc (presence), 56
  fume formation, reduction, 63
  slag production, 56
  usage, study, 62
Electrostatic precipitators, 354
  usage, 355
Electrostatic precipitator-type sampling devices, usage, 329
Ellipsoid latitude/longitude, 397f
Embarkment, stone slurry (usage), 50
Emergency Planning and Community Right-to-Know Act (EPCRA), 495
  air quality issues, 345
Emergency storage capacity, 210–211
Emissions
  control equipment, 351
  impact, 146–147
Endangered Species Act (ESA), 495
Engineering. See Environmental engineering
  role, 502–503
Enterobacter spp., impact, 156
Entrainment scrubber, 355
Entrainment scrubber, 355
  conducting, 504
  impact statements, relationship, 505
term, usage, 507–508
value, 505
Environmental control officer, duties, 157
Environmental control programs, 102
Environmental corridors
assessment, 477–478
concept, advancement, 477
Environmental engineering
map requirements, 407–410
surveying/mapping, 396
Environmental impact analysis, 505–524
scoping, 508–509
terminology, 506–508
Environmental impact statement (EIS), 505
actions/activities, impact, 519f
aesthetic factors grouping, 517t–518t
air quality parameters, 520t–521t
alternatives, selection/analysis, 514
assessment, factors, 515
attention, 511
attributes, 522t–523t
comprehensive assessment, 515–524
content, 510–514
disciplines, requirement, 518
ecological factors grouping, 517t–518t
environmental impact categories,
522t–523t
factors, consideration, 511
format, recommendation, 509
impact description, 510–511
outline, recommendation, 513–514
physical/chemical factors grouping,
517t–518t
proposed action
alternatives, 511–512
description, 510
social/physical factors grouping,
516t–518t
term, usage, 508
Environmental inspection/report outline, 167–169
Environmental lapse rate, 337
Environmental protection, 68
cradle-to-grave approach, 5
LCA, usage, 5–6
Environmental quality, 102
Environmental sanitation. See Housing
Environmental survey, standard penalty scores (APHA), 94t–95t
Environmentally balanced industrial complexes (EBICs), 65, 69
development, 65
EPA. See U.S. Environmental Protection Agency
EPCRA. See Emergency Planning and Community Right-to-Know Act
Epoxy, 9
EPR. See Extended producer responsibility
Equal loudness contour, 374f
Equipment. See Landfills
shelter, 273–274
Erie County (New York), population trends, 84f
ESA. See Endangered Species Act
Ethylene, plant impact, 314
European Economic Community (EEC), CFC phaseout, 318–319
Excess air combustion, 283
Extended producer responsibility (EPR), 7
Exterior paint, necessity, 123
F
Facilities. See Community facilities; Individual facilities
equipment inspection/report outline, 168
plans, 447
Fairfield-Hardy composting, 236
FDA. See Food and Drug Administration
Federal agency, term (usage), 508
Federal Aid Highway Act of 1962, 495–496
Federal Aviation Administration (FAA), 496
Federal Demonstration Cities and Metropolitan Development Act of 1966, 495
Federal Food, Drug, and Cosmetic Act (FFDCA), 495
Federal Highway Act of 1970, 384
Federal Housing Act of 1954, Section 701, 495
Federal Housing and Home Finance Agency (HHFA), 495
Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 495
Federal model city planning enabling act of 1927, 432
Federal Water Quality Act of 1972, 496
Fertilizer, restriction, 69
FFDCA. See Federal Food, Drug, and Cosmetic Act
Fiber-reinforced plastic (FRP) manholes, 21
FIFRA. See Federal Insecticide, Fungicide, and Rodenticide Act
Filters. See Particulates
Final engineering/construction, 447
involvement, 469
movement, 467–468
Financing clinic, usage, 113–114
Finding of no significant impact, term (usage), 508
Finished steel products, routes, 55
Finishing/storage phase, sand molding process, 53
Fired products, properties, 47t
Fires, smoke (impact), 147
Fish form, 69
Fixture plumbing, details, 138f
Fixture supply/drain, minimum sizes, 133t
Fixture trap, vent distance, 133t
Flexural test, 72–73
Flood hazard, presence (determination), 474
Floor tiles, compositions, 46t
Floors, water protection, 121
Fly ash, 178
disposal, 287, 289
reaction, 356
FOIA. See Freedom of Information Act
Food and Drug Administration (FDA), 296
Food industry, 25–31
Food Quality Protection Act (FQPA), 495
Food waste, 178
Forced aeration, 27
Forests, burning (impact), 316
Formaldehyde, 144–145
occupational exposure, reduction, 145
organics, 351
sources, 144–145
Fossil fuels, burning (impact), 316
Fossil-fuel-fired electric generating stations/plants, 347
Foundry sand, 53–54
agricultural products, 54
chemical composition, 55t
geotechnical applications, 54
manufactured products, 55
maximum flexural load, 73f
reinforcement. See Plastics
tensile strengths, 72f
usage, 67
uses, 54–55
FQPA. See Food Quality Protection Act
Freedom of Information Act (FOIA), 495
Freon. See Dichlorodifluoromethane
Frequency. See Sound
Fresh air makeup, reduction, 148
Frontal inversion, 338
Front-end loader, 270f
bulldozer, inclusion, 270f
Front-loaded collection vehicle, example, 208f
FRP. See Fiber-reinforced plastic
Fugitive emissions, 321
Furans, organics, 351
Furnace flue, defect, 128

G

GAC. See Granular activated-carbon
Garbage, 178
shed, dilapidation, 125–126
storage, 125
Gaseous collectors/treatment devices, 357–358
Gases. See Landfills
combustion products, 282–283
extraction system, 264f
extraction well, diagram, 265f
impact. See Global warming;
Greenhouse gases
release, 357
sampling, 329–331
treatment, 354
warming effect, 316
Gas-monitoring wells, sampling, 278
Gaussian air quality modeling, 361
General obligation bonds, issuance, 446
Geodetic Reference System ellipsoid of 1980, 404
Geodetic Reference System of 1980, 398
Geographic area, graphic representation, 396
Geographic location, data (relationship), 396
Geoid, 396–397
Geology, study, 474–475
INDEX 535

Geomatics, 395
Geomembrane, 178
placement. See Area-type landfill
Glass, usage. See Cement
Global warming
carbon dioxide, impact, 316–318
gases, impact, 316–318
Goals, objectives (planner distinction), 443
GOS. See Gravity oil separator
Government surveyors, instructions, 407
Granite
environmental impacts/mitigation, 44–51
industry, 40–51
scrapes, 44
semisolid/slurry waste, 43
solid wastes, 43
waste, 42–43
application, 45
distribution, 42t
types, 43
usage. See Polymer concrete
Granular activated-carbon (GAC) filter, usage, 143
Gravity oil separator (GOS), 66
Gray-list projects/industries, environmental impacts, 2–3
Green sand, 53
Greenbelts, provisions, 361
Greenhouse gases, impact, 317
Ground granulated BF slag, usage. See Concrete
Ground-level ozone issues, addressing, 346
Ground-level pollutant concentration, variation, 359f
Grounds, environment inspection/report outline, 167
Groundwater, 178
leachate contamination, 240
source, adequacy, 472
Growth/change (anticipation), plan component, 434
Gutters, absence, 124–125
Gyproc, 68

H
Habitable room, window (absence), 127
Halons, phaseout, 346
Handrails, absence, 125
Haul distances, impact. See Incineration;
Sanitary landfill
Hauled container systems (HCSs), 202
personnel requirements, 204
suitability, 202
Hawkins, David G., 374
Hazardous air pollutants, 345t
Hazardous Materials Transportation Act, 296
Hazardous waste, 178, 292–305
biological degradation, 305
business/industry generation, examples, 300t
characteristics, 292–293
chemical treatment, 305
corrosivity, 292
definition, 292–293
generation, 296, 300
ranking, 296
ignitability, 292
inclusion, 292
in-place vitrification, 305
land disposal, prohibition. See Untreated hazardous waste
landfill burial, 305
laws, 295–296
legislation, 293
lining materials,
effectiveness/compatibility, 304
long-term storage, 301, 304
management, 300–305
control principles, 304–305
material, 75
meaning, RCRA (usage), 292
processing technologies, 301
RCRA regulations, absence, 293
reactivity (explosiveness), 292
recycling, 301
reduction, 300–301
toxicity, 292
identification, 296
transportation, 301
treatment methods, 302t–303t
zero discharge, goal, 300
HCFC, phaseout, 346
HCSs. See Hauled container systems
HDPE. See High-density polyethylene
Health
action, principles, 103
Health (Continued)
criteria (APHA), 99–103
department, impact, 106–107
letters, landlord seizures, 113
needs, principles, 102–103
Hearing protection/conservation, criteria, 375
Heating units, venting, 151–154
Heavy metals, leachate, 74
HFC. See Hydrofluorocarbon
HHFA. See Federal Housing and Home
Finance Agency
High-density polyethylene (HDPE), 9
High-rise apartments, solid waste
handling/storage, 198–199
High-volume samplers, usage, 328
Highway noise, reception (control), 381
Hoist truck, example, 203f
Horizontal axis mixing/heating furnace, 18f
Horizontal axis shredders, usage, 14
Horizontal control network, 403
Horizontal survey control network,
402–403
Hose Bibb vacuum breaker, 136f
Hospitals
air quality standards, 162
collection, 157
environmental health survey form,
158f–159f
fire resistance, attention. See
Non-fire-resistive hospitals/nursing
homes
fire safety, concerns, 157
health care, providing, 159–160
hospital-acquired infection rate, 156
infection surveillance/control program
guidelines, 159
infectious/pathological wastes, disposal,
162
laundry, wash-water temperatures, 159
low-level radioactive solid waste,
disposal, 163
sanitation, 156–160
survey/inspection, 160
wastes, 160, 162–163
Hot paste, transfer, 16
Hot water
absence, 119
demands/uses, 134t
Household hazardous waste, contamination,
189
Housing
apartments, dirtiness, 126
attic, refuse (presence), 125
cellar occupancy, unlawfulness, 127
codes, 445
enforcement program, staffing patterns,
112
plumbing code reference, 130
conservation/rehabilitation ordinance,
enforcement, 111–114
criteria, consideration, 110–111
deterioration, first sign, 86
early/late disabilities, avoidance, 89
economic factors, 96–104
enforcement measures, summarization,
114–118
enforcement procedures, 114–118
enforcement program
contradictions, 112–113
steps, 111–112
environmental control programs, 102
environmental health aspects, 89
environmental quality, 102
environmental sanitation, 97
estimates, obtaining, 129
exterior paint, necessity, 123
federal/state/local governmental
leadership/support, 109
first inspection, findings (form letter),
115f
floors, water protection, 121
form paragraphs, usage, 118–129
furnace flue, defect, 128
garbage
shed, dilationation, 125–126
storage, 125
gutters/rain leaders, absence, 124–125
habitable room, window (absence), 127
handrails, absence, 125
health
criteria (APHA), 99–103
factors, 96–104
interrelationship, 88–89
principles, 99–103
health hazards, example, 87f
hot water, absence, 119
human factors, 100
hygiene indices, 97
improvements, financing, 113–114
incomplete bathroom, 119
lead paint, presence, 125
life expectancy, 89
major repairs, 129
minor repairs, 129
morbidity/mortality rates, 89
ordinances. See Minimum standards
housing ordinance
enforcement, 86–87
plan component, 434
planning, 96–97
plaster, looseness, 124
plumbing, 129–137
premature deaths, avoidance, 89
problems
complexity, 87
elimination, 86
factors, 87–88
resolution, 104–105
solutions, 108–110
program, 104–118
approach, 104–105
community short-term/long-term plans,
perspective, 110
components, 105–107
outline, 107–108
quality
rating, 93
scores (APHA), 95t
radon, presence, 143
rat infestation, 128
reinspection letter, sending, 115
roach infestation, 128
roof, leakage, 124
rotted/missing siding, 123
rubber-hose gas connection, 128
safety/injury prevention, 101
sanitation/maintenance, 100–101
sewage disposal system, overflow, 128
sewer, clog, 127
sleeping room, overcrowdedness,
126–127
social factors, 96–104
stairway details, 121f
structural safety, 119
survey
methods, 97–99
results, 113
third-floor occupancy, unlawfulness, 127
vented heater, usage, 127
wall
construction, 120f
sag, 123–124
water closet
flush tank, operation problem, 125
leakage, 121
tank, diagram, 126f
wellwater supply, protection (problem), 129
WHO definition, 83
window details, 124f
yard/vacant lot debris, 126
Housing Act of 1949, 386
Housing and Health APHA-CDC
Recommended Minimum Housing
Standards, 104
Housing and Urban Development Act of
1968, 386
Human environment, term (usage), 508
Human misery, expense, 117
Hydraulic press, 19f
Hydrocarbons
complete combustion, 286–287
NAAQS, 343
Hydrofluorocarbon (HFC) 23, impact, 316
Hydrogen fluoride, plant impact, 314
Hygiene indices. See Housing
I
Illnesses, transmission (possibilities), 155
Impact statements, usage, 503–505
Impacts, term (usage), 507
Impingement scrubber, 355
Impingers, usage, 328
Incarceration, health care services
(increase), 165
Incineration, 76, 279–291
building design, 289–290
attractiveness, 290
cost comparison, 211f
disposal cost, haul distances (impact),
210f
draft pressure measurements, 286
economics, 291
electric power, availability/cost, 290
emissions, management, 291
INDEX

Incineration (Continued)
facilities
implementation issues, 290–291
siting, 290–291
gaseous emissions, 287
industrial solid waste/ash production, 76–77
instrumentation, necessity, 286
odor control, 286–287
particulate emissions, 287
plant layout, 289–290
arrangement, 290
process, control, 286
public health issues, 291
site selection, 289–290
site suitability, 290
smoke density, 286
smoke emission, control, 286
temperature monitoring, 286
wastes, handling method/cost, 290
weight station, usage, 286
Incinerators, 178. See also On-site
commercial/industrial incinerators
air pollution control equipment,
requirement, 280
ash/fly ash, exit, 287
capacity, 285
constraints, 183
operation
definition sketch. See Mass-burn
incinerator
description. See Municipal solid waste
residue management, 287, 289
solid waste, physical/chemical
characteristics, 281t
stack heights, 285
types, 283–287
Income property, ownership, 86
Incomplete bathroom, 119
Incremental noise reduction, 382
Indian floating cover, 30–31
diagram, 30f
Indirect effects, cause, 507
Indirect waste piping, 137
Individual facilities, 101–102
Indoor air
air pollutants, determination methods,
151t
contaminants, sources/exposure
guidelines, 139t–140t
pollution, causes/sources, 137–140
quality, 136–154
Indoor radon, entry sources, 142–143
Industrial development/modernization,
characterization, 4
Industrial discharges, RCRA regulations
(absence), 293
Industrial ecology, 6–7
concept, usage, 35
Industrial noise, 377
collection, 380–381
factors, 380
Industrial solid wastes utilization/disposal, 1
Industrial sources, solid waste generation
rates, 192t
Industrial waste, 7, 178
disposal, 76–77
Industrial/commercial waste landfill
configuration, 256f
Industries
classification, 1–3
methodology, 3
definition, 1
environmental impact, 2
negative impacts (reduction),
system-oriented approach (usage), 35
Inertial collection equipment, usage, 328
Infants, respiratory illness, 147
Infectious medical wastes, collection,
194–195
Infectious wastes
source, 194
treatment, 194
Informational meetings, usage, 466
Infrastructure quality, impact, 470
Inhalable particulates, sampling, 327–328
Institutions
equipment, 83
environment, 83
environmental health inspection form,
166f
sanitation, 155–169
small communities, 155–156
solid waste handling/storage, 199
Integrated solid waste management, 179
definition sketch, 181f
implementation, 184–185
Integrated steel production, 55
  involvement, 56
Integrated waste management (IWM), 180–185
  hierarchy, interpretation, 180
Interlocks
  application, 20f
  development, 20f
  plastic rejects, usage, 21
Internal combustion engine, air pollutant producer, 350
International Organization for
  Standardization (ISO), LCA standards, 5
International treaties, necessity, 364
Interstate compacts/agreements, necessity, 364
Inventory analysis. See Comprehensive planning
  focus/scope/depth, 442
Inversion, 337. See also Frontal inversion;
  Radiational inversion; Subsidence inversion; Surface impact. See Stacks
In-vessel composting system, 235–236
In-vessel methods, composting, 232
Iron industry, 55–64
  environmental impacts, 56–58
  waste materials, 58t
Iron slags, application, 61
Irregular surface, survey computations, 398
Irrigation waters, RCRA regulations (absence), 293
ISO. See International Organization for Standardization
IWM. See Integrated waste management

J
Japan, natural resources consumption, 5

K
Kalundborg Industrial Estate, 68
Kalundborg system, 35–36
Kemira, sulfuric acid production, 69
Kidney dialysis machines, precautions, 157, 159
Kiln dust, collection, 33
Klebsiella spp., impact, 156

L
Lakes/streams, acid rain (impact), 320
Lambert projection, 399, 401
Land
  development projects, planning/design
    (map requirements), 407–410
  feasible use, 360
Land subdivision, 480–494
  design, 482–484
    assumptions, 490–491
    comparative analysis, 488f, 489t
    types, alternative, 486–492
  design/development, regulation, 482
  fiscal analysis, 494
  impact, 481–482
  information, importance, 483
  layouts, 487
  plans, 503–504
  proposal, 482–483
  site analysis, 487f
  site selection/assessment, 484, 486
  field inspection, 486
Land use
  comprehensive plan requirement, 440–441
  plan component, 434
  plan element, 435
  regulation
    comprehensive plan requirement, 442
    plan component, 434
Landfills, 183–184
  access roads, maintenance, 277
  accessibility, 251
  area policing, 275
  biodegradable organic matter, waste
    biodegradation/stabilization, 255–256
  burning/salvaging, absence, 275
  cap. See Multi-layer landfill cap
  closure requirements, 278
  compactor, illustration, 270f
  cutoff walls/barriers, usage, 260
  design issues, 251–257
  dust/paper, control, 277
  equipment
    requirements, 269
    requirements, minimum, 271t
    shelter, 273–274
    usage. See Sanitary landfill
Landfills (Continued)

- excavating/spreading/compaction equipment, usage, 269, 273
- facilities/equipment, usage. See Sanitary landfill
- fill stabilization, acceleration, 256
- final cover, 267
- fire protection facilities, 268–269
- full-time supervision, 274
- gas constituents, 258
  - control, 258
  - migration, control, 260
- production, early stages, 263
- recovery/utilization, 258
- gas generation, 258–260
  - acid phase, 259
  - initial adjustment phase, 258
  - maturation phase, 260
  - methane fermentation phase, 260
  - phases, diagram, 259
  - transition phase, 259
- geomembrane placement. See Area-type landfill
- hauling, cost comparison, 211
- infiltration, determination, 252
- insect/rodent control, 275–276
- inspection maintenance program, 277
- irrigation system, inclusion, 268
- land area/volume, requirement, 251–252
- leachate
  - control, 252–255
  - generation, 252
  - migration, problem, 254–255
  - recirculation, 255–256
  - treatment, 252, 256–257
- liners, objective, 254
- location, 251
- maintenance, 276
- methane recovery/utilization, 260–263
  - mining, 267–268
- monitoring well, diagram, 253
- operation, 274–276
  - control, 274
- practices, 276–278
- passive gas vent, usage, 267
- personnel, operation (relationship), 274–275
- rats/flies/vermin, breeding (control), 278
- resource, 184
- salvaging, conducting, 277
- site closure, 256, 278–279
- conversion, 278–279
- hydrogeological investigation, 268
- location, 251
- space/energy, recycling (impact), 217
- supervision, 274–276
- technology/operation, 183–184
- types, schematic view, 249
- usage, types, 243
- use. See Completed landfill
- vegetation, usage, 266–267
- weight station construction, 269
- working fill, face, 276

Land-use development, placement, 484, 486

Land-use plan
  - adoption, 473
  - execution, 436
  - relationship, 510

Land-use planning efforts, 477

Lapse rate, 337. See also Dry adiabatic process lapse rate; Environmental lapse rate; Prevailing lapse rate

Large-scale cadastral maps, 408
Large-scale topographic maps, 408
Latitudinal lines, 405
LCA. See Life cycle assessment
LDPE. See Low-density polyethylene
Leachate, 179
  - control. See Earth cover; Landfills
  - generation. See Landfills
  - recirculation. See Bioreactor type landfill
  - control, 256
  - example, 257
  - release, minimization, 287
  - treatment. See Landfills
  - wells, sampling, 278

Leachate test, results, 74

Lead, contribution. See Air pollution
Lead paint, presence, 125
Legal plan implementation actions, prerogative, 446–447
LGC. See Low-grade clay
Life cycle assessment (LCA), 3–4
  - cradle-to-cradle basis, 4
  - flowchart, 6
  - flowchart, 4
identification. See Products
importance, 4–7
standards. See International Organization
for Standardization
sustainability indicator, 65
usage. See Environmental protection
Living unit/structure,
  housing/environmental principles, 99–101
Loan insurance, construction stimulation, 106
Local government, role, 364
Local health/environmental protection
  agencies, planning/plan
  approval/regulatory responsibilities, 503
Local topography/meteorology, study, 361
Location, appreciation. See Property
Location selection criteria, cost-oriented
  factors. See Sites
Long-term, term (usage), 512
Loudness. See Sound
  contour. See Equal loudness contour
Low-density polyethylene (LDPE), 9
Low-grade clay (LGC), 46
Low-interest loans, arrangement, 118
Low-level radioactive solid waste, disposal.
  See Hospitals; Nursing homes
Low-rise apartments
  containers, usage, 198f
  solid waste handling/storage, 198
Low-rise residential areas, solid waste
  handling/storage, 196, 198
Lumbricus Rebellus, usage. See Red worm
Lung disease, 310

M
Magnetic observation, 398
Malodorous gases, impact, 315–316
Manholes
  cover/base, 21f
  rejects application, 21–22
Manual loading collection vehicles,
  application, 204
Manually loaded collection vehicles
  examples, 206f
  one-person crew, labor requirements, 209t
Manufacturing processes
  cradle-to-grave materials flow, 5
  private sector redesign, 181
Manure, usage, 26
Mapped soils, characteristics
  (interpretations), 472
Mapping
  definitions/concepts, 396–405
  system, 409–410
Maps
  comprehensive plans, 439
  creation, foundational elements, 396–398
  importance, 396
  projections, 398
  usage, 408
  requirements, 407–410
  types, requirements, 408
Marble. See Agglomerate marble; Cast
  marble
  components, 40–41
  cutting, 42
  end user distribution, 42
  environmental impacts/mitigation, 44–51
  industry, 40–51
  inventory management, 42
  lifting/transportation, 42
  polishing, 42
  production process, 41f
  quarry extraction, 41
  scrapes, 44
  semisolid/slurry wastes, 43
  slurry, chemical analysis, 43
  list, 44t
  slurry, usage. See Concrete; Mortars
  solid wastes, 43
  waste, 42–43
  applications, 45
  distribution, 42t
  types, 43
  usage. See Polymer concrete
Marine Protection, Research, and
  Sanctuaries Act, 295
Mass-burn incinerator, operation (definition
  sketch), 280f
Mass-burn municipal waste combustion
  facility, energy production facilities
  (schematic), 284f
Mass-fired combustors, 283–284
  furnace walls, description, 284
Materials degradation, measurement, 333
Materials flow
  closed-loop system, 7
  open system, 3
Materials recovery, 217–218
  methods/equipment, 220
  processing technologies, 218
  relationship. See Waste reduction
Materials recovery facility (MRF)
  capacity ranges, 221t
  feasibility analysis, 227t
  final design, 229t
  flow diagrams, 220–221, 224
  functions/operations, usage (example), 219t–220t
  functions/system components,
    mechanization degree basis, 221t
    implementation, 218–224
  materials, usage (examples), 219t–220t
  planning/design, technical considerations,
    224–225
  issues, 227t–229t
  preliminary design, 228t–229t
  process flow diagram, 224f. See also
    Mixed paper/cardboard separation
  types, 218
  list, 221t
  usage, 202. See also Commingled solid waste; Source-separated material waste components, manual separation, 223f
Materials recovery/transfer facility (MR/TF), 218
Materials recycling, 217–218
Materials separation, methods/equipment, 220
Mean Sea Level Datum, 404–405
Mechanical noises, 384
Mechanical recycling, 10
Mechanically loaded collection vehicles examples, 208f
  one-person crew, labor requirements, 209t
Mechanically loaded stationary container systems, labor requirements, 207
Media
  sound speed, 369t
  sound travel, 368
Medical wastes
  collection, 194–195
  regulation, 194–195
Medium-rise apartments
  containers, usage, 198f
  solid waste handling/storage, 198
Melamine, 9
  usage, example, 14
Melting, sand molding process, 52
Mercator projection, 401. See also
  Transverse Mercator projection
Meridional lines, 405
Metal foundry industry, 51–55
Metals
  casting, 51
  RCRA Toxicity Characteristic Rule regulation, 294t
Meteorology, 334–338
  study, 476
  usage, 341
Methane
  characteristics, 261–262
  control. See Earth cover fermentation phase. See Landfills production, 260–261
  Methane-utilizing bacteria, impact,
    266–267
  Methyl chloroform, phaseout, 346
  Microcline, marble component, 40
  Micrometeorology, application, 333
Milamean thermoset, recycling inability, 67
Minimills. See Secondary processing
Minimum standards housing ordinance, 103–104
Mining sites, coal desulfurization, 320
Mixed MSW, materials separation, 223f
Mixed paper/cardboard separation, MRF
  process flow diagram (usage), 225f
Mixed plastics wastes, 13–22
  photo, 13f
Mixed solid waste, composting, 232
Mixed wastes, combustion, 287
Mobile home parks, 154–155
Modular combustion units, 285
Moisture
  content, composting factor, 26
  requirements. See Ventilation
Monitoring well, diagram. See Landfills
Montreal Protocol on Substances that Deplete the Ozone Layer, 318–319
Mortars
  compressive strength, 48–49
  elasticity, modulus, 49–50
  marble slurry, usage, 47–50
  tensile strength, 49
Motor grader, 270f
Moving-bed scrubber, 355
MRF. See Materials recovery facility
MR/TF. See Materials recovery transfer facility
MSW. See Municipal solid waste
MSWLFs. See Municipal Solid Waste Landfills
Multi-layer landfill cap, 266f
Multiple waste recycling industry, 66–67, 70–75
case study, 70
environmental tests, 73–75
mechanical tests, 71–73
mixes, combination, 71t
relationship, 67f
waste integration, 65
Municipal composting systems,
  function/reactor configuration, 233t
Municipal emergency repair program,
funding, 118
Municipal plan commission
  function/duty, 433–437
  plan elements, 435–436
Municipal Solid Waste Landfills (MSWLFs)
  configuration, schematic diagram, 244f
criteria, 242, 244
Municipal solid waste (MSW), 179, 185
  compost usage, percentage, 241
  incineration emission design/operation guidelines, 288t–289t
  incinerator operation, description, 279–281
  organic portion
    co-composting, 226
    composting, 226
  oxidation/combustion, reactions, 282
  percentage distributions, estimates, 187t
  physical composition, estimates. See Residential MSW
  processing/recovery, methods/equipment (usage), 222t
  transfer stations, usage, 212t
  transformation, 290
Municipal wastewater sludge (MWWS),
  usage, 38
N
NAD-27. See North American Datum of 1927
NAD-83. See North American Datum of 1983
National Acid Deposition Program of 1978, data, 320
National ambient air quality standards (NAAQS), 343. See also Carbon monoxide; Hydrocarbons; Nitrogen oxide; Particulate matter; Photochemical oxidants; Sulfur oxide usage, 344t
National Environmental Policy Act of 1969 (NEPA), 494, 505–506
terminology, 506–508
National Geodetic Survey (NGS), 398, 403
  Control System, 403–405
  horizontal survey readjustment, 4040
National Geodetic Vertical Datum of 1929 (NGVD-29), 404–405
National Institute for Occupational Safety and Health (NIOSH), 296
National Plumbing Code, 129
National Pollutant Discharge Elimination System (NPDES), 246
  CAA, Title V (similarity), 346
  permit considerations, 295
  usage. See Sanitary landfill
National primary ambient air quality standards (NAAQS), state approval, 344
National Weather Service, information source, 334
Natural additives, usage, 26
Natural Carrara marble powder, mixture, 51
Natural composting, 26–28
  process, 27f
Natural drainage basins, considerations, 438
Natural ecosystems, principles (basis), 6–7
Natural resource base
  comprehensive plan requirement, 439–440
  plan component, 433
  survey, 476–477
Natural resources, conservation strategy, 4
Natural stone slurry, 43
incorporation. See Cement usage. See Red ceramic bricks/tiles
Natural ventilation, 148
Naturizer composting, 236
NAVD-88. See North American Vertical Datum of 1988
Neighborhood pride, resurgence (stimulation), 117
unit design, 485f
unit plan, 483
Neighborhood Environmental Evaluation and Decision System (NEEDS), 97–99
stages, 99
Nemerow, Nelson (EBIC development), 65
Neutral lapse rate, turbulence (association), 359
Neutral stability, 337
New PVC production, scrap PVC production (cost comparison), 24f
New urbanism design, 484
New urbanism design type subdivision layout, conceptual basis, 491–492
New urbanism subdivision layout, 488f
New York City, commercial waste placement (manual collection), 201f
New-generation nuclear reactors, benefits, 317
Newton (N), force requirement, 371
NGS. See National Geodetic Survey
NGVD-29. See National Geodetic Vertical Datum of 1929
Nitrogen, release, 319
Nitrogen dioxide (NO₂), determination, 330
Nitrogen oxide (NO) chemiluminescence analyzer, usage, 330
NAAQS, 343
ozone reaction, luminescence, 330
Noise. See Ambient noise; Background noise
cathode-ray oscillograph, usage, 378
control. See Industrial noise; Transport noise
methods, 378–380
preventive measures, WHO Expert Committee, 379–380
regulations, EPA regulations, 387
regulations, involvement, 379
dosimeter, 378
exposure level, EPA report, 375
federal regulations, 384–387
health hazard, 374–375
impact, 375–376
interference, absence, 473
level, 369–370
land use relationships. See Design noise level-land use relationships measurement, 377–378
eighty-band analyzer, usage, 378
pollution, 369
reaction, 375
reception, control. See Highway noise source control, 378–379
sources, 376–377
consideration, 372
state/local regulations, 387–388
term, usage, 369
Noise control, 309–310
discussion, 367–388
health impact, 310–311
amendments, 385
Noise reduction (NR), 381–384
decibel measurement, 382
Non-fire-resistive hospitals/nursing homes, attention, 160
Nongovernment agencies, role, 118
Nonincinerable wastes, handling method/cost, 290
North America Industrial Classification System (NAICS), industry classification, 1–2
North American Datum of 1927 (NAD-27), 398, 404
basis, 402
North American Datum of 1983 (NAD-83), 398
creation, 404
NAD-8391), 404
North American Vertical Datum of 1988 (NAVD-88), 405
Northings, 402
Nosocomial infections, prevention, 157
Noys, 374
NPDES. See National Pollutant Discharge Elimination System
NR. See Noise reduction
Nuclear reactors, benefits. See New-generation nuclear reactors
Nuclei counters, usage, 329
Numerical air quality modeling, 361
Nursing homes
  air quality standards, 162
  construction, 157
  fire resistance, attention. See Non-fire-resistive hospitals/nursing homes
  fire safety, concern, 157
  health care, providing, 159–160
  infectious/pathological wastes, disposal, 162
  inspection form, 162f–163f
  low-level radioactive solid waste, disposal, 163
  sanitation, 156–160
  survey/inspection, 160

O
O3. See Ozone
Occupational Safety and Health Act, 296, 495
Occupational Safety and Health Administration (OSHA) establishment. See Airborne exposure limit
regulations, setting/enforcement, 384
Octave-band analyzer, usage. See Noise
Odor-producing operations, 357
Off-site recycling, 66
Oil burning, reductions (necessity), 317
Oil Pollution Act of 1990 (OPA), 495
Old orchards, presence (pesticide presence), 474
On-site commercial/industrial incinerators, 285
On-site recycling, 66
On-site well water, availability, 493
OPA. See Oil Pollution Act of 1990
Opacity. See Air opacity
determination. See Percent opacity
Open industrial system, 3–4
Open spaces
  provisions, 361
  system, connection/contiguosness, 491f
Open top container, lids (inclusion), 200f
Operational planning, 496–502
Operational soil maps, U.S. Natural Resources Conservation Service preparation, 474–475
Organic chemicals, RCRA Toxicity Characteristic Rule regulation, 294t
Organic material, decomposition/stabilization, 231
Organic solid waste, decomposition/stabilization, 232
Ortho photographs, 471
Orthoclase, marble component, 40
Orthometric height, 397f
Owners, office consultations, 116
Ownership, registration/reregistration (requirement), 118
Oxygen (aeration), composting factor, 26
Ozone (O3)
  chemiluminescence analyzer, usage, 330–331
  destruction, CFCs (impact), 318
  formation, 319, 324–325
  impact, 318–319
  NAAQS restriction, EPA proposals, 346
  ozone-depleting chemicals, phaseout, 346
  plant impact, 314

P
Packed-bed scrubber, 355
Parasites, temperature/exposure time (requirement), 238t
Partially processed commingled MSW, composting, 226
Particles, impingement, 351
Particulate matter
  impact, 32
  NAAQS, 343
  restriction, EPA proposal, 346
Particulates
  collectors/separators, 351–356
  emissions, 146–147
  filters, 352, 354
Partitions, rejects (usage), 22f
Pascal (Pa), pressure unit, 371
Passive composting, 27
  process, 28f
  technique. See Cement
Passive gas control, permeable trench (usage), 262f
Passive gas control synthetic membrane, 261f
Passive gas vent, usage. See Landfills
Pathogens control. See Compost
destruction, temperature/exposure time (requirement), 238t
Pathological medical wastes, collection, 194–195
Pavement, stone slurry (usage), 50
PC. See Polycarbonate; Polymer concrete
PCA. See Portland Cement Association
PCBs. See Polychlorinated biphenyls
PE. See Polyethylene
Pebble bed systems, 317
Perceived noise level (PNL), 373
Percent opacity, determination, 331–332
Permeable soils, rainwater absorption ability, 472
Permeable trench, usage. See Passive gas control
Personal hygiene, importance, 168
Pesticides
agricultural spraying, 321
RCRA Toxicity Characteristic Rule regulation, 294t
PET. See Polyethylene terephthalate
Phenolics, 9
Phons, specification, 373
Photochemical oxidants
NAAQS, 343
production, 325
Photogrammetric methods, usage. See Topographic maps
Phthalates, usage, 8
Physical air quality modeling, 361
Physical development, engineering (necessity), 502–503
Physical factors grouping, 516t
Physical/chemical factors grouping, 517t–518t
Pitch (sound), 367
determination, 370
Plan alternatives, development/evaluation, 444
Plan commissions function/duty. See Municipal plan
commission; Regional plan
commission
state enabling legislation, impact, 432
Plan elements, 435–436
Plan implementation, 436
policy development, relationship, 445–447
Plan report, components, 433–437
Plan selection/ adoption, 444
Plane surveying procedures, 398
Plane waves, emission, 368
Planning. See Comprehensive planning;
Operational planning; Program
planning; Project planning; Sites;
System planning
area, definition, 438
assessment, 429
board, impact, 105
classification, 430
criteria. See Urban planning
data, reliability (importance), 438
database, usage, 471–472
process, 437–447. See also
Comprehensive planning
stage. See Systems planning stage
term
appropriation, 431
usage, 430–431
Plants, air pollution (impact), 314–315
Plaster, looseness, 124
Plasterboard production, 68
Plastic red clay (PRC), 46
Plastics
benefits/detriments, 8
industry, 7–24
cradle-to-cradle concept, process flow
diagram, 23f
mix, recycling, process flow diagram, 17f
recycling
benefits, 9
process flow diagram, 12f
stages, 11
rejects, 70
application, 19, 21
foundry sand reinforcement, 72–73
usage, 8f
wastes. See Mixed plastics wastes
mixing, recycling system, 16
Plate scrubber, 355
Plate-type electrostatic precipitator, diagram, 355f
Plumb lines, 397
Plumbing, 129–137
  code, 129–134
to, 130
details, 137. See also Fixture plumbing facilities, minimum number, 131t–132t fixture, 130
  systems, plans (approval), 130
PNL. See Perceived noise level
Pollen samplers, usage, 329
Pollutant standards index (PSI), 347
  values, comparison, 348t–349t
Pollutants. See Air pollutants
  concentrations/health effects, 348t–349t
discharge, high stacks (impact), 319–320
  emission, high stacks (usage), 359
Polluted water, backflow, 134
Pollution, causes/sources. See Indoor air
Pollution Prevention Act (PPA), 495
Polycarbonate (PC) blends, 66
Polychlorinated biphenyls (PCBs), 145
  organics, 351
Polycyclic aromatic hydrocarbons, organics, 351
Polyethylene (PE), usage, 10
Polyethylene terephthalate (PET), 9
Polymer concrete (PC), marble/granite waste (usage), 50
Polymerization, 13
Polypropylene (PP), 9
  conversion. See Recycled PP
usage, 10
Polystyrene (PS)
  foam, recycling, 67
usage, 10
Polyvinylchloride (PVC)
  case study, 22–24
  manufacture, 8
  plastic offcuts, recycling, 22
  production, cost comparison. See New PVC production
usage, 10. See also Scrap PVC
Population
growth, 85–86
trends, 84f
Portable kerosene heaters, fire hazard, 152–153
Portland cement, chemical composition, 31
Portland Cement Association (PCA)
  kiln information, 32
  operating plants, report, 31
POTW. See Publicly operated treatment works
Pouring, sand molding process, 53
PP. See Polypropylene
PPA. See Pollution Prevention Act
PRC. See Plastic red clay
Precalciner, usage, 32
Precipitation, 338
Preliminary engineering, 447
  movement, 467–468
Preprocessing, 11
Pressure gradient, impact, 339
Pressure vacuum breaker, 136f
Pressure-type vacuum breaker, 136
Pretrial hearing, providing, 117
Prevailing lapse rate, 337
Primary sector, 3
Prime movers, 270f
Principal landfill gases, generation, 258–260
Private construction, 107
Processed waste, composting process, 231f
Processing
  stage, 11
technologies. See Materials recovery
Products
  development, mix plastic waste recycling (usage), 16–17
  environmental impact, LCA
  identification, 5
  final preparation phase, sand molding process, 53
Profit, discouragement, 117
Program planning, 494–496
Project planning, 467–469
Property, location (appreciation), 476
Proteus spp., impact, 156
PS. See Polystyrene
PSI. See Pollutant standards index
Public areas, ventilation (usage), 148–149
Public facilities
  community provision, 480–481
  site development, 471
Public Health Service Pub. 1038, 130
Public health services, necessity, 502
Public housing and urban development, 106
Public infrastructure development projects,
  corridor planning stage (insertion), 468
Public participation, 465–466. See also
  Comprehensive plan
  achievement, 466
  process. See Comprehensive planning
Public sewerage, availability, 473
Public utilities, plan component, 434
Public works
  construction, consideration, 446
  development process, 447–465
  facilities
    integrated systems, 447
    support, map requirements, 407–410
Publicly operated treatment works (POTW), 295
Pulsed fluorescent analyzer, usage, 329–330
Pure tone, 367
  hearing, 374
  sine wave, 368f
PVC. See Polyvinylchloride

Q
Quality of living
  APHA appraisal method, 91–95
  appraisal, 91–96
Quarry location, exploration/identification, 41
Quartz, marble component, 40
Quiet Communities Act of 1978, 385–386

R
Radiational inversion, 337
Radon
  contamination, 143
  entry sources. See Indoor radon
  exposure, measurement, 144
  hazard, 142
  impact, 142–144
  level, EPA proposal. See Drinking water
Rain leaders, absence, 124–125
Ramp method. See Sanitary landfill
Range lines, 406f
Rat infestation, 128
Ravine area method. See Sanitary landfill
Ravine landfill, 249f
devvelopment, 250f
Raw material, usage, 23f
Raw PVC, product creation (example), 24f
RCRA. See Resource Conservation and
  Recovery Act
RDF. See Refuse derived fuel
Real estate, purchases (advice), 505
Real property boundaries
  description, 407
  legal descriptions, interpretation,
    408–409
  lines, correlation ability. See
  Topographic data
Rear-loaded collection vehicle, example.
  See Commingled solid waste
Recreational use sites, 473
Rectified aerial photographs, 471
Recycled glass, melting temperature, 217
Recycled HDPE, end uses, 11
Recycled LDPE, end uses, 11
Recycled PET, uses, 10
Recycled plastic, product creation
  (example), 24f
Recycled PP, conversion, 66
Recycling, 179
  growth, 182
  opportunities. See Cement
  perception/usage, 182–183
  problems, 182
  public education, impact, 183
Red ceramic bricks/tiles, natural stone
  slurry (usage), 45–47
Red wiggler (Eisenia Foetida), usage, 28
Red worm (Lumbricus Rebellus), usage, 28
Refuse, 179
Refuse derived fuel (RDF)
  burning, 217
costliness. See Densified RDF
  energy content, 284–285
  RDF-fired combustors, 284–285
Regional organizations, input (necessity), 364
Regional plan commission
function/duty, 433–437
plan elements, 435–436
Regional planning, rational process, 429–430
Regulatory requirements, compliance assessment (determination), 504
Reinforced fiber plastic (RFP), usage, 21
Reinspection letter, sending, 115
Rejects, application, 21–22
Rent controls, impact, 87–88
Rental housing gross income, total costs (contrast), 88f
Reradiated heat, trapping, 316
Residential environment, 83
community/individual facilities, 101–102
housing/environmental principles, 101–102
human factors, 100
safety/injury prevention, 101
sanitation/maintenance, 100–101
Residential MSW, physical composition (estimates), 188t
Residential solid waste
collection, containers (usage), 197f
completed landfill, usage, 263
IWM implementation, 184–185
flowchart, 184f
Residuals, 179
Residue management. See Incinerators
Resource Conservation and Recovery Act (RCRA), 495
air quality issues, 343, 345
amendments, 293
usage, 293, 295
Subtitle D, 242
usage. See Hazardous waste
Resource recovery, 179
municipal operation consideration, 217
partial waste disposal/reclamation process, 217–218
Resources
planning, impact, 430–431
term, usage, 512
Respiratory diseases
smoking, impact, 311
spread, 141
Respiratory illness
control, 150–151
NIOSH recommendations, 150
Resurveys, survey markers (recovery), 399
Returnable bottle deposit law, interest, 214, 217
RFP. See Reinforced fiber plastic
Rigid plastic, size (reduction), 14
Rigid thermoplastic waste, shredder (usage), 14
Ringelmann smoke chart
replacement, 331–332
usage, 331
Roach infestation, 128
Road pavement layers, usage. See Cement
Road paving, 69
Roof, leakage, 124
Rotted/missing siding, 123
Rubber-hose gas connection, 128
Rubbish, 179

S
Safe, Accountable, Flexible, Efficient Transportation Equity Act of 2005, 496
Safe Drinking Water Act (SDWA), 495
Sand. See Foundry sand; Green sand; Spent sand
maximum flexural load, 73f. See also Foundry sand
tensile strengths, 72f. See also Foundry sand
Sand and mold preparation, 52
Sand molding technology, processes, 51–53
Sand-casting system, 53
Sanitary code, 445
Sanitary landfill, 179
area method, 248, 250
area policing, 275
burning/salvaging, absence, 275
compaction equipment, 272f
construction guidelines, 247t–248t
county agency/joint municipal survey committee, impact, 246
design, 242
guidelines, 247t–248t
issues, 251–256
disposal
cost, haul distances (impact), 210f
landfill facilities/equipment, usage, 268–274
Sanitary landfill (Continued)
excavating/spreading/compaction equipment, usage, 269, 273
insect/rodent control, 275–276
inspection maintenance program, 277
intermunicipal cooperation, 242, 244–245
leachate. See Community sanitary landfills
legal requirements, 242, 244
long-term planning/design issues, 242, 245–246
machines, size/type usage, 273
maintenance, 276
methods, 242, 246–250
NPDES permit, 246
operation, 242
equipment, usage, 270f
guidelines, 247t–248t
practices, 276–278
operation, direction, 274
plan, provisions, 278–279
planning, 242–246
engineering project, 276
ramp method, 248, 250
ravine area method, 250
site closure/conversion, 278–279
social/political factors, 242, 245
supervision, 274–275
total area, study, 244
trench method, 246
valley area method, 250
Sanitary wastes, treatment/disposal (provision), 492–493
SARS. See Severe acute respiratory syndrome
SC. See Shale clay
Scale and sea level reduction factor, 402
Scale factor, 402
Schools
sanitation, 163
inspe ction form, 164f–165f
ventilation, usage, 148
Scoping. See Environmental impact analysis
Scrap PVC
production, cost comparison. See New PVC production
usage, 23f
Scraps. See Granite; Marble characteristics, 44
Scrubbers, 355
SCSs. See Stationary container systems
SDWA. See Safe Drinking Water Act
Sea level reduction factor, 402
Secondary processing (minimills), 55, 56
Secondary sector, 3
Sedimentation/settling devices, usage. See Ambient air
Septic tank treatment/disposal systems, 493
Setting chambers, 352
Severe acute respiratory syndrome (SARS), 497
Sewage disposal system, overflow, 128
Sewage sludge, composting. See Cement
Sewer, clog, 127
Sewerage facilities planning report, outline, 447–453
Shale clay (SC), 46
Shanty towns, development, 85
Sheet-making process, 23–24
Shelter, environment inspection/report outline, 167–168
Short-term, term (usage), 512
Shower addition, alteration, 123f
Shredders, usage, 16
Shredding crushing machine, 14f
Side-loaded right-hand standup drive collection vehicle, example. See Commingled solid waste
Side-loading vehicle
dual compartment, in clusion (example), 208f
example. See Source-separated materials
Single transfer trailer, drop bottom (inclusion), 216f
Sites
area, size, 473
assessment, 471–472. See also Land subdivision
inspection, inclusion, 472
design, 478–480
team, components, 479
development, 471
features, 472–473
improvements, necessity, 478
inventory, 473–478
investigation, 504
location
  selection criteria, cost-oriented factors, 470
  stages, 469–471
plan, display, 479
planning, 469–480
  introduction, 469–470
  process, professional advice, 479–480
selection, 470–471. See also Land subdivision
process, 471
  professional advice, 479–480
suitability assessment, 471
survey, 473–474
SIWM. See Sustainable industrial waste management
Slag
  concrete, compressive strength development, 61t
generation, 56
granulation, 59–60. See also Dry slag granulation
  system. See Continuous slag granulation system
processing, importance, 59
recycling, 57
replacement levels, 63f
types, utilization (investigation), 62–63
utilization, potential, 58–64
Sleeping quarters, noise levels, 387t
Sleeping room, overcrowdedness, 126–127
Sludge, particle size distribution, 46
Slums, 85
development, public (impact), 85
Slurry. See Granite; Marble; Natural stone slurry
  atmospheric diffusion. See Dry slurry particles, dimension, 43
  physical/chemical properties, 43–44
  presence, 48
Small direct-discharge solid waste transfer stations, 215f
Smog, plant impact, 314
Smoke, measurement, 331–332
Social factors grouping, 516–518t
Soil amendment, salmonella repopulation, 238
Soil fertility (pH reduction), marble particles (impact), 45
Soil moisture retention (improvement), compost (usage), 229
Soil survey, 474–475
  information, usage, 471–472
Soiling
  measurement, 331–332
  tape samplers, usage, 332
Solid–brick groups, compressive strength (development), 63f
Solid uncompacted wastes, vehicles (usage), 211
Solid waste, 179
  characteristics, 185–189
collection, 199–209
  service, type, 199
  systems, types, 202–204
  combination, 292
  composition, 185, 187
depth, 277
disposal
  availability, 473
  facilities, investment, 275
  sites, number (reduction), 209
generation, 191t
generation rates, 190t–191t
  industrial sources, 192t
health issues, 207
on-site handling/storage, 195–199
personnel requirements, 204–207
quantities, 185, 187–189
reduction/recovery/recycling, extent, 214
sources, 185. See also Community solid waste
  specific weight, 189
transfer, 209–213
  landfill haul, cost comparison, 211f
  operations, economic analysis, 209
  trailers, examples, 216f
transfer stations. See Direct load solid waste transfer stations; Storage load solid waste transfer stations
definition sketch, 213f
development. See Combined direct-load/discharge load solid waste transfer stations
siting issues, 213
Solid waste (Continued)
types, 210. See also Municipal solidwaste
transport, 209–213
treatment facilities, investment, 275
weight, 193t
Solid Waste Disposal Act of 1965, purposes
(expansion), 293
Solid waste management, 177
complexity, 177
definition, 179
terms, definitions, 178–180
Solid waste slag, generation, 56
Sones
loudness unit, 374
specification, 373
Sonic collectors, usage, 352
Sound
absorption, 381–383
analyzer, 378
average transmission coefficient,
383–384
decibel, 370
energy
absorption, 381–382
collection, 382
transmission, 383–384
frequency, 370
intensity, 372
distance, doubling, 369
measurement, 373
inverse square law, 368
levels
combination, 373t
human response, 376t
maximum, 385t
loudness, 373–374
pressure, 367
decibel values, 372t
level, change, 371
levels, American Conference of
Governmental Industrial
Hygienists (recommendation),
386t
term, usage, 371–373
source/receptor, separation distance, 384
speed. See Media
terms/properties, definitions/explanations,
367–375
transmission, 383–384
tavel, 368. See also Media
wave
distance, 368
intensity, 373
A-weighting, 371
weighting networks, 377
Sound transmission class (STC), 383
Sound-absorptive materials, 382–383
Sound-level meter, 377–378
time response, 377
Source reduction, 180
couragement, 181
focus, 180–181
practice, 181
Source separation, 180
Source-separated compostable wastes,
separation, 223f
Source-separated materials
MRF, usage, 218
side-loading vehicle, example, 207f
Source-separated recyclable materials, 197f
Source-separated recyclable materials, MRF
examples, 219–220
Source-separated waste (processing), MRF
(usage), 224f
Southeastern Wisconsin Regional Planning
Commission, environmental corridor
concept, 477
Specifications for Sound Level Meters, 377
Spent green foundry sand, physical
properties, 54t
Spent sand, 53
Spherical waves, 368
Spirit level, usage, 397
SPL, increase, 374
Spray towers, 355
Spring cleaning, community service, 199
Stacks
emissions, inversion, 338
heights. See Incinerators
inversion, impact, 338
sampling, 332–333
Stairway details, 121f
Standard lines, 046f
Standard Plumbing Code (Southern Code),
129
State administrative codes, impact, 482
State health/environmental protection
agencies, planning/plan
approval/regulatory responsibilities, 503
State Plane Coordinate grid values, 404
State Plane Coordinate Systems, 398
   basis, 401
   creation, 403–404
   grid
   coordinates, 404
   creation, concepts, 400f
   spherical coordinate conversion, 402
State plane grid distances, ground level
   distances (relationship), 400f
Static aerated compost pile, schematic, 235f
Stationary combustion installations, 347
Stationary compactors, inclusion. See
   Direct discharge solid waste transfer
station
Stationary container systems (SCSs), 202,
   204
   manually loaded collection vehicles,
   examples, 206f
Statistical air quality modeling, 361
STC. See Sound transmission class
Steel industry, 55–64
   environmental impacts, 56–58
   wastes
   disposal, cost, 59
   materials, generation, 58
Steel plant dust, transformation, 63–64
Steel products, routes. See Finished steel
   products
Steel slags, applications, 61
Stoichiometric combustion, 283
Stone slurry
   substitution, 49
   usage, 47–50. See also Embankment;
   Pavement
Storage load solid waste transfer stations,
   210, 211
Storage-discharge solid waste transfer
   station, definition sketch, 213f
Stormwater management facilities planning
   report, outline, 453–460
Straight lines, constant bearing, 399
Streets
   hierarchy, 492
   right-of-way, 480–481, 492
Structural safety, 119
Structures, environment inspection/report
   outline, 167
Subdivision. See Land subdivision
Subgrade road pavement layer, usage, 39
Subsidence inversion, 337
Substandard housing
   critical period, 86–88
   effects, 90–91
   health/economic/social impact, 88–89
   impact, 84–91
   problem, growth, 84–86
   local government control, 85
   restoration, 110
Suitable living environment, 83
Sulfur dioxide
   contribution. See Air pollution
   emissions, reductions (EPA-phased-time
   basis), 345–346
   plant impact, 314
Sulfur oxide
   NAAQS, 343
   release, 319
Sulfur removal, 356
Superfund
   air quality issues, 345
   list, landfills (presence), 184
Superfund Amendments and
   Reauthorization Act (SARA), 495
Superfund Amendments and
   Reauthorization Act Title III (SARA
   Title III), air quality issues, 345
Surface
   inversions, 339
   uneven heating, occurrence, 334
Surface Mining Control and Reclamation
   Act, 296
Surface water
   cover material, usage, 263–266
   drainage, 276
   leachate contamination, 240
   management, 263–267
Surface-water source, adequacy, 472
Surge capacity, 210–211
Survey. See Control survey
Survey control networks, 402–403. See
   also Horizontal survey control
   network; Vertical survey control
   network
Surveying, definitions/concepts, 396–405
Sustainability indicators, 65
Sustainable development (promotion), cradle-to-grave concept (usage), 6
Sustainable environment, achievement, 36
Sustainable industrial waste management (SIWM), importance, 7
System planning, 447
movement, 468–469
Systems planning stage, 468
Tangent plane projection, 398–399
surveys, usage (limitation), 399
Tangent projection maps, bearings (display), 399
Tape sampler, usage. See Coefficient of haze; Soiling
Tax foreclosure proceedings, permission, 118
Temperature, composting factor, 26
Tensile strength test, 71–72
Thermal afterburners, 357
Thermal decomposition, 305
Thermal requirements. See Ventilation
Thermoplastics, 9–11
coding, 11f
recycling, 10
U.S. production/recycling, amount, 9f
Thermosets, 9, 12–13
recycling inability. See Milamean thermoset
Thermosetting plastics, mechanical properties, 13t
Third-floor occupancy, unlawfulness, 127
Three-piece bathroom, dimensions, 122f
Till frame, drop box (unloading), 203f
Tobacco smoke, 145–146
Toilets/bathrooms, ventilation (usage), 149
Topographic data, real property boundary lines (correlation ability), 409–410
Topographic maps. See Large-scale topographic maps
overlay processes, 408
preparation, photogrammetric methods (usage), 408–409
usage, 471
Topography, 338–340
survey, 473–474
usage, 341
Topography, term (usage), 333
Topsoil, porosity/permeability (reduction), 44
Total composting time, determination, 230
Total suspended particulate (TSP), 328
measurement. See Ambient air
Township lines/subdivisions, 406f
Toxic pollutants
Council on Environmental Quality identification, 297f–299f
identification, 296
Toxic Substances Control Act of 1976 (TSCA), 295, 495
Track compactor, trash blade (inclusion), 272f
Tracked bulldozer, 270f
Tractor
life, estimation, 269, 273
trailer combination, example, 216f
Traffic problems, interference (absence), 473
Transfer station, 180. See also Solid waste
Transfer trailers. See Solid waste
Transport noise, control, 381
Transportation
facilities, considerations, 438
plan component, 434
plan element, 435
Transverse Mercator projection, 401
system. See Universal Transverse Mercator projection system
Trash blade, inclusion. See Track compactor; Wheeled compactor
Trench landfill, 249f
Trench method. See Sanitary landfill
Trenches (digging), drag line (suitability), 273
Tropical rain forests, destruction (control), 316–317
TSCA. See Toxic Substances Control Act of 1976
TSP. See Total suspended particulate
Turbulence, 335
impact. See Air flow
U
UNAMAP. See User’s Network for Applied Modeling of Air Pollution
Uncompacted wastes, vehicles (usage), 211
INDEX

Uncontrolled contaminant emissions, 350t
Uniform Plumbing Code, 129
Universal testing machine (UTM), usage, 72
Universal Transverse Mercator (UMT) projection system, 401–402
Universities, sanitation, 163
Untreated hazardous waste, land disposal (prohibition), 293
Unvented heater, usage, 127
Urban areas, congestion, 85
Urban cluster subdivision layout, 488f
Urban development/redevelopment, guidance/shape, 438–439
Urban heat island effect, 340
Urban noise, 377
Urban planning
  comprehensiveness, 431
  criteria, 431–432
  geographic area, control, 431
  implementation devices, 433
  institutional structure, 432–433
  long-range perspective, 431
  objectives/principles/practices, understanding, 429
Urban redevelopment funds, eligibility, 109–110
Urban sprawl, 480
U.S. Bureau of Public Roads, 496
U.S. Bureau of the Census, data, 96
U.S. Coast and Geodetic Survey (USC and GS), 403
U.S. Environmental Protection Agency (EPA)
  air pollutant concern, 344
  air quality criteria, development, 342–343
  ambient monitoring program, 327
  District of Columbia Circuit Court, agreement, 346
  EPA-phased-time basis. See Sulfur dioxide
  high-volume sampling, 328
  planning support, 496
  reference methods, 327
  standards, 341
U.S. Geologic Survey, 1-to-24,000 scale quadrangle maps (usefulness), 472
U.S. Natural Resources Conservation Service. See Operational soil maps
U.S. Public Land Survey, one-quarter section corners, 399
U.S. Public Land Survey System (USPLSS), 405–407
creation, 403
Used tires, collection, 195
User’s Network for Applied Modeling of Air Pollution (UNAMAP), 362
USPLSS. See U.S. Public Land Survey System
Utilities
  environment inspection/report outline, 167
  necessity, determination, 475–476
  plan element, 435
  services, 492–494
V
Vacuum, nonpressure-type siphon-breakers, 135f
Vacuum breakers, types, 136f
Valley area method. See Sanitary landfill
Vapors
  conservation, 358
  release, 357
Ventilation, 147–150. See also Natural ventilation
  air change, measurement, 149
  air infiltration/fresh air makeup, reduction, 148
  monitoring, 149–150
  prevention factors, 152
  thermal/moisture requirements, 147
  usage. See Correctional institutions; Public areas; Schools; Toilets/bathrooms
Venting
  details, 153f
  ensuring, 152
  prevention, factors, 152
Venturi scrubbers, 355
diagram, 357f
Vermi composting, 28
Vertical axis mixing/heating furnace, 18f
Vertical mixing, diurnal/nocturnal mixing, 339f
Vertical survey control network, 403
Vibration control, preventive measures (WHO Expert Committee recommendation), 379–380
Volatile organic compounds (VOCs), 146 contribution. See Air pollution

W
Wall
construction, 120f
sag, 123–124
Warm dry air, cooling rate, 337
Washbasin addition, alteration, 123f
Waste exchange network industry, 65, 67–69
Kalundborg Industrial symbiosis, 68f waste-related industry, integration, 65
Waste industrial sector, classification, 65
Waste industry, 65–69
Waste oil, collection, 195
Waste reduction, 214, 217
materials recovery, relationship, 213–225
Wastes
biodegradation/stabilization. See Landfills
collection, 11
collection, treatment (usage), 305
conservation, 70
generation, quantities (data), 189
materials, unloading (example), 215f
recovery/reuse/recycling, 305
separate collection, 193–195
source elimination/reduction, 304
Waste-to-energy combustion, 183
Waste-to-energy incineration, 180
Wastewater collection/treatment, cost (estimation), 475
Water and sewer divisions, responsibility, 106
Water closet
flush tank, operation problem, 125
leakage, 121
tank, diagram, 126f
Water Pollution Control Act, 293
Water quality, 522t–523t
Water supply availability, 473
consideration, 475
Water supply facilities planning report, outline, 460–465
Water-cooled slag, grinding, 69
Watershed area tributary, extension, 474
Wetwater supply, protection (problem), 129
Wet collectors, usage, 355–356
Wetlands, consideration, 438
Wheeled compactor, trash blade (inclusion), 272f
White goods, recycling (avoidance), 274
White-list industries/projects/establishments, environmental impacts, 2
Wind
impact, 334–336
speed, increase, 357
Wind rose, 334
example, 335f
Wind speed, impact. See Air pollutants
Window details, 124f
Windrow, anaerobic conditions, 234
Windrow composting, 233–236
operation, 231f
technology, 232
Wood stoves, air pollution contribution, 321
Woodlands, consideration, 438
Work areas, selection, 110–111
Working fill, 276

X
Yard wastes, composting, 226
preparation, 231f
Yard/vacant lot debris, 126

Y
Zero discharge, goal. See Hazardous waste