A BRIEF FEASIBILITY STUDY:

RELOCATION OF PARIS WASTE TRANSFER STATION AND BROWNFIELD SITE REMEDIATION

PREPARED BY: WEST SIDE NEIGHBORHOOD ASSOCIATION

BACKGROUND

In 2020, the Paris City Commission funded the development of the West Side Neighborhood Plan in partnership with the West Side Neighborhood, Community Leadership, EHI Consultants and the Bourbon County Joint Planning Office. This Plan examines the impact of the built environment on access to economic opportunity with the goal of enhancing quality of life for its residents. One of many action items committed to is the relocation of the City of Paris Solid Waste Transfer Station.

To access the "dump" garbage trucks and other vehicles with trailer-loads have to drive through the West Side neighborhood. According to the City of Paris operational data, at least 30 vehicles visit the Waste Transfer Station daily. Each vehicle must drive through this residential area to enter and exit the facility. This locally unwanted land use (LULU) creates externality costs that negatively affect the neighborhood. These include safety risks, noise, odor, litter, vermin, visual intrusion and the perceived discomfort of neighborhood residents.

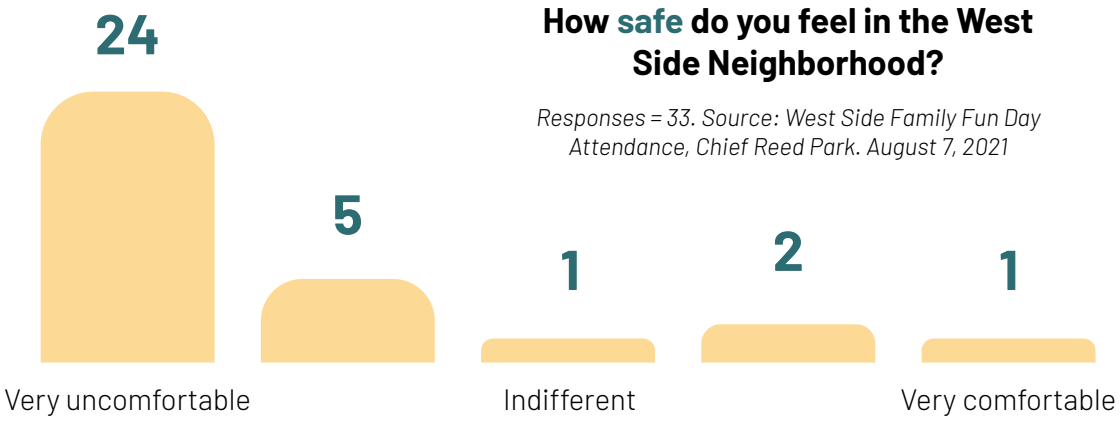
Prior to the completion of the municipal incinerator at its current location in 1965, the site was formerly known as Riverside Park, which was a community park dedicated to the adjacent African American neighborhood of Paris during the years of segregation. The park's most notable features were the baseball and softball diamonds where both sports were played throughout the summer and the open picnic areas. Also, on the first Friday in May, "May Day" was celebrated where it featured amateur baseball teams facing off with one another based out of neighboring towns such as Mount Sterling and Winchester. Furthermore, the park had its own club called the "Riverside Park Club", which was incorporated on 8/22/1930, where its purpose was to promote the pleasure and bodily health of its members by means of outdoor sports. Finally, when Kentucky's segregation laws were struck down throughout the 1950s, the neighborhood residents now had additional options for the parks they can go to

The City of Paris Waste Transfer Station is located on the tip of the West Side Neighborhood "peninsula" bound on three sides by Houston Creek. Prior to 1965 the "dump" site was formerly known as Riverside Park, a place where folks gathered from far and wide to play baseball and other organized sports. *Photo Source: Bourbon County Citizen, May 6, 2021 edition*

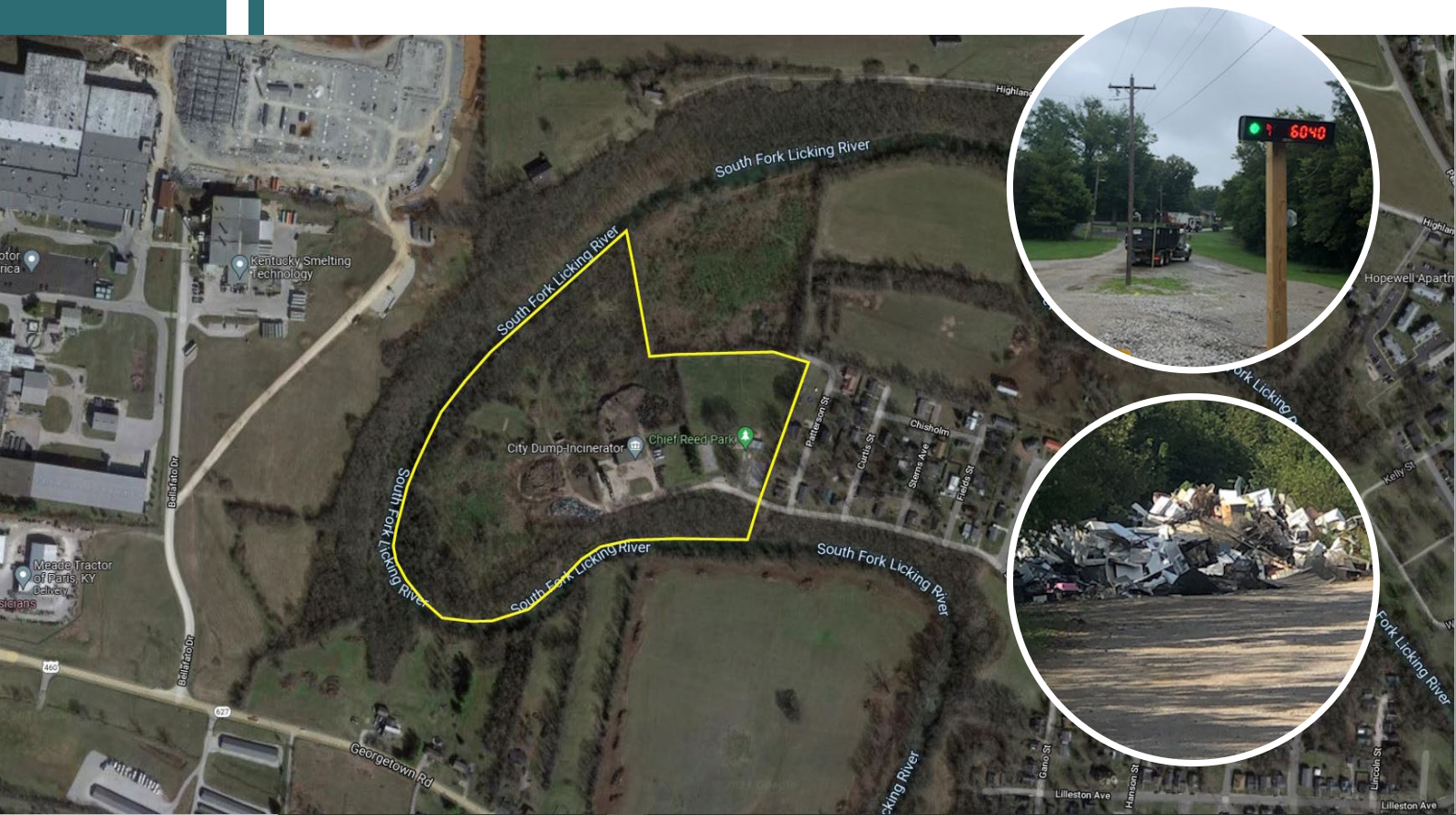
for recreation and Riverside Park eventually closed by 1962.

- In 1965, the municipal incinerator and "city dump" was built on the western portion of the former Riverside Park
- In 1982, "William Bill" Chief Reed Park was built on the eastern portion of the former Riverside Park and was dedicated on 9/6/1982

Over the past 2 years citizens of, Paris, Bourbon County and the West Side Neighborhood have voiced their concerns about the current location of the City of Paris transfer station, as not being a safe and suitable location in the West Side Neighborhood. In addition, citizens feel that this location of the transfer station disproportionately and adversely impacts the health, safety and mobility of the West Side residents and creates an environmental justice issue.



Survey respondents of the West Side Family Fun Day in the Summer of 2021 revealed that almost 75% of survey respondents reported feeling unsafe and uncomfortable in the West Side neighborhood.

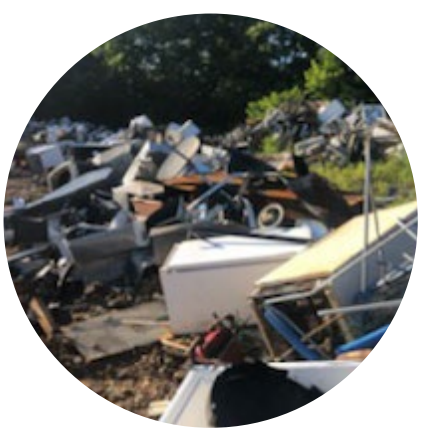


In 1993, the National Environmental Justice Advisory Council (NEJAC) was formed to "provide independent advice, consultation, and recommendations to EPA on matters related to environmental justice." The Waste and Facility Siting Subcommittee, one of NEJAC's six subcommittees, received numerous comments from citizens of several major metropolitan waste transfer stations and their disproportionate siting in low-income communities and communities of color .

According to the U.S. Environmental Protection Agency (EPA), environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, culture, education, or income with respect to the development, implementation, and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people should bear a disproportionate share of negative consequences resulting from industrial, municipal, and commercial operations or the execution of governmental programs and policies.

Remediating LULUs such as the Waste Transfer Station through brownfield redevelopment will result in benefits to the immediate residents of the West Side Neighborhood and the entire City of Paris community. Remediated land can be reused and moved closer to its highest and best use, thereby enhancing quality of life and economic value. These benefits include improvements in mental and physical health, improved ecosystem services (e.g. water access, air quality), aesthetic and recreation values, and better land productivity.

The purpose of this report is to expand on the environmental justice concerns the residents have with the transfer station being located within the West Side neighborhood. After speaking with the Paris City Commission and the Bourbon County Fiscal Court about the relocation of the transfer station, the residents decided to take on the task of conducting an investigation into identifying the steps necessary for the relocation of the transfer station. The residents have completed an investigation with the preparation of this document that details the cost of relocating the facility, the approximate amount of land needed for such a facility along with siting, planning and design guidelines that are needed. This report is preliminary and is not intended to be all inclusive, but it establishes some baseline standards that should be considered by public officials.



It is understood that the current facility serves primarily as a citizen drop-off station or community convenience center and is technically not considered a waste transfer station but a "convenience center", which is defined by EPA as a designated area where residents manually discard waste and recyclables into dumpsters or collection containers. These containers are periodically removed or emptied, and the waste is transported to the appropriate disposal site (or possibly to a transfer station first). Convenience centers are not suitable for use as transfer stations because they cannot readily handle the large volume of waste that is discharged by a self-unloading collection truck. While this site may not technically be considered a transfer station within its present context, it is important to note that as a heavily used convenience centers it does create similar concerns as a transfer station (e.g., litter, road access, vehicle queuing, and storm water run-off). Consequently, it is appropriate to consider implementing some of the concepts and practices being advocated for by the citizens of the West Side and larger community.

This document identifies the facility and siting standards for a waste transfer station, design and operating standards and regulatory oversight that is necessary and required when siting, designing, constructing, and operating a transfer station or convenience center. This document also addresses the need for the City of Paris to address reclamation efforts of the current transfer station site once it is relocated. For purposes of this report reference is being made to a convenience center facility as being similar in character and operation as a transfer station.

Sources and information for the development of this report was provided by the Environmental Protection Agency – Office of Solid Waste, City of Paris and other local and regional waste and solid waste providers.

FACILITY PLANNING AND SITING

Optimal size or acreage to accommodate Paris and Bourbon County

- The current city facility receives an average monthly tonnage of 186 tons
- The current facility has on the average a monthly customer count of 680 customers
- The current size of the municipal incinerator is about **8 acres** (measured from aerials)
- Given the significant amount of open space with the existing municipal incinerator (based on current aerials), a site between **2 to 5 acres** is suitable enough for a new convenience center/transfer station, that would allow for future growth and expansion.

Type of facility

- Since the ideal location for a convenience center/transfer station is in a rural area, it could be designed as an uncovered or a partially covered facility
- If the facility is partially covered, they are typically enclosed on three sides with the vehicle entrance side open, or simply have a roof with no walls
- A common design for a rural convenience center/ transfer station is to use a single open-top trailer situated beneath a raised customer tipping area
- The raised customer tipping area allows customers to back up to the trailer or drop boxes and directly unload their waste into the roll-off trailer
- An alternate design for a rural transfer station is to use a completely contained modular system
- This system uses prefabricated waste collection bins that can be quickly assembled in the field, are completely sealed, and are animal- and people-proof
- Waste is deposited into the sealed bin by one of two methods – a small sliding door on the front panel can be opened by hand allowing small waste loads to be deposited, while the entire front panel can be raised using a power source to allow collection vehicles to unload
- For isolated sites lacking electrical power, vehicle drivers can use a power takeoff or a hydraulic connection from their collection vehicles to lift the front panel
- If required by state or local regulations, leachate (wastewater runoff) collection tanks also can be installed onsite

Transfer station components

- This type of a facility typically has the following building components along with on-site parking and access roads to a major highway – a scale house, an office building, a maintenance building, and the main transfer station building
- If on-site recycling is desired, a materials recovery facility (MRF) can be added

Estimated construction costs for a new transfer station (based on 2021 dollars):

Based on a preliminary cost analysis and discussion with other waste collection providers the estimated construction costs are in the range of **$750,000 to $1 million**, excluding the cost of land.

$750,000	**$850,000**	**$1,000,000**
Uncovered roll-off transfer station	Covered roll-off station	Enclosed roll-off transfer station

Site characteristics for the new convenience center/ transfer station

A variety of issues must be taken into account during the planning and siting stages of a convenience center/transfer station development. The types of waste that is typically accepted, will affect the convenience center/transfer station's size and capacity, and issues regarding facility siting, including process issues and any public involvement. While the planning and siting phases of a facility development might involve a significant investment of resources, this initial investment is crucial to ensuring an appropriate project outcome sensitive to the community.

Site Selection

Identifying a suitable site for a waste transfer station can be a challenging process. Site suitability depends on numerous technical, environmental, economic, social, and political criteria. When selecting a site, a balance needs to be achieved among the multiple criteria that might have competing objectives. For example, a site large enough to accommodate all required functions and possibly future expansion, might not be centrally located in the area where waste is generated. Less than ideal sites may still present the best option due to transportation, environmental, and economic considerations.

Yet another set of issues that must be addressed relates to public concern or opposition, particularly from people living or working near the proposed site. The relative weight given to each criterion used in selecting a suitable site will vary by the community's needs and concerns.

Any potential convenience center/transfer station site should consider the following characteristics:

- 1,000 feet minimum distance away from residences, restaurants, day care centers or other sensitive neighborhoods
- Site topography that allows it to be hidden or at least screened from view by the surrounding properties
- Access off a roadway wide enough for two vehicles to easily pass
- Site topography that allows its orientation to minimize wind-blown debris
- Acceptable soil geology and groundwater conditions
- Access to water and electric utilities and on-site access road characteristics
- Exclude sensitive areas such as wetlands, floodplains, endangered and protected flora and fauna habitats, protected sites of historical, archeological, or cultural significance, prime agricultural land, parks, and preserves.
- Federal laws defining sensitive areas include the:
    - The Endangered Species Act
    - The Migratory Bird Conservation Act
    - The Coastal Zone Management Act;
    - The Wild and Scenic Rivers Act;
    - The Marine Protection, Research, and Sanctuaries Act; and
    - The National Historic Preservation Act.

Potential sites

Based on current aerial and zoning maps, the optimum sites for a new station are within the vacant properties and areas that are currently or will be zoned as commercial or industrial off MLK Boulevard (US 27/68 bypass) and Millersburg Road (US 68) such as:

1. 49-acre future commercial site off MLK Boulevard near its South Fork Licking River crossing (outside the floodplain)
2. 50-acre future industrial site on the SW corner of the Georgetown Road (US 460) and MLK Boulevard intersection
3. 33-acre future commercial site outside the city limits on the NW corner of the MLK Boulevard and Peacock Road intersection near Stoner Creek (outside the floodplain)
4. 71-acre future industrial site on the SE corner of the Millersburg Road (US 460) and Jackstown Road intersection

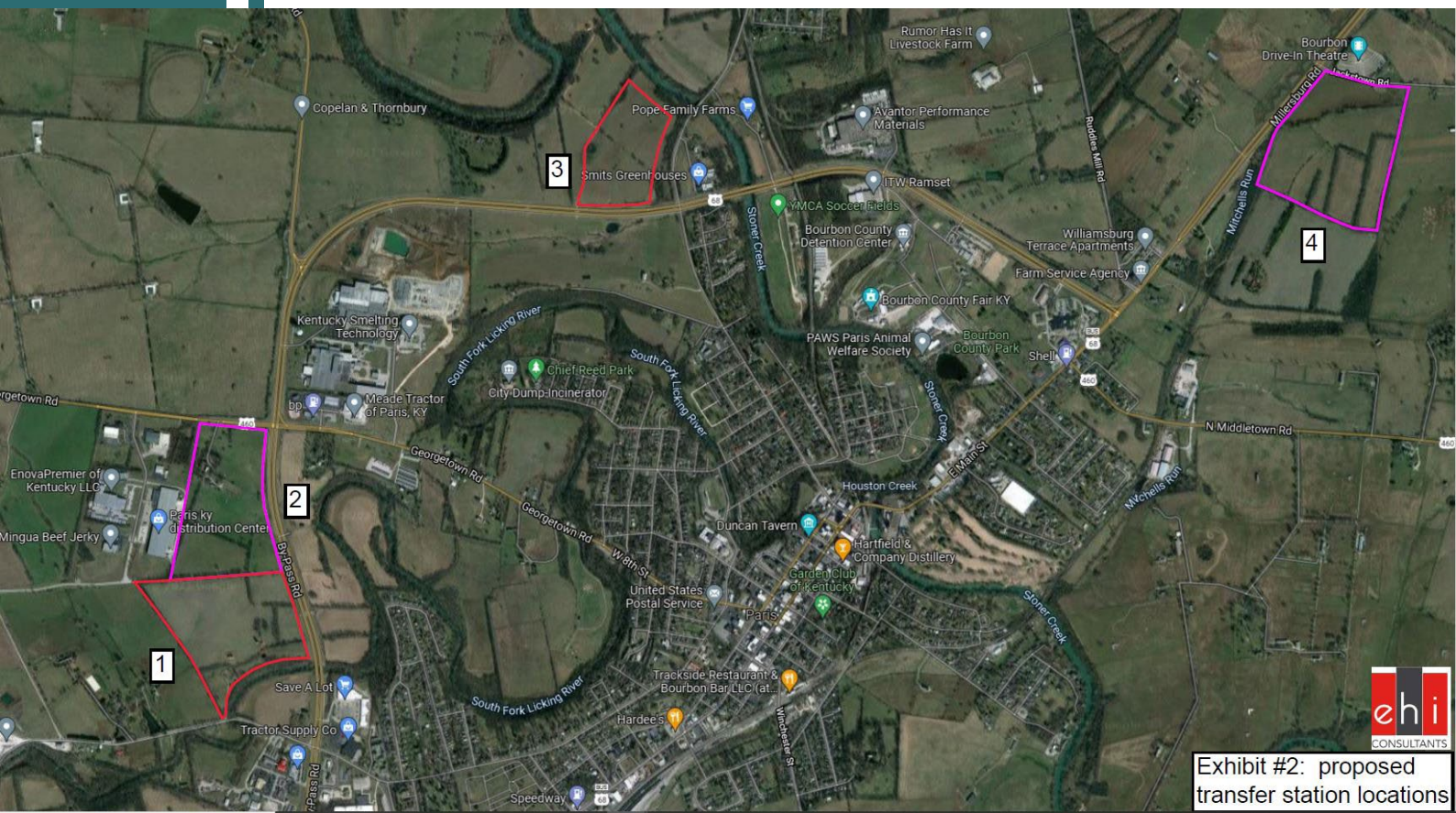


Exhibit #2: proposed transfer station locations

The Siting Process and Public Involvement

A siting process that includes continuous public participation is integral to developing a transfer station. The public must be a legitimate partner in the facility siting process to integrate community needs and concerns and to influence the decision-making process. Addressing public concerns is also essential to building integrity and instituting good communications with the community. Establishing credibility and trust with the public should be a priority in this endeavor.

Technical Siting Criteria

Technical parameters for criteria are needed that help define the best potential facility sites. These criteria provide guidance on specific engineering, operation, and transportation conditions that should be considered when selecting a site, to ensure that potential sites are feasible from technical, environmental, and economic perspectives. These criteria address the following issues:

- **Central location to collection routes:** To maximize waste collection efficiency, convenience centers and transfer stations should be located centrally to waste collection routes. As a rule of thumb in urban and suburban areas, transfer stations should be no more than 10 miles away from the end of all collection routes. Beyond that distance, collection routes might need to be altered to enable refuse to be collected and deposited at the transfer station within one operating shift.
- **Access to major transportation routes:** A convenience center and transfer station should have direct and convenient access to truck routes, major arterials and highways. It is preferable to avoid routing traffic through residential areas because traffic generated by transfer stations contributes to congestion and increased risk to pedestrians, as is the case in the West Side community.
- **Site size requirements:** The area required for specific transfer stations varies significantly, depending on the volume of waste to be transferred, rates at which waste will be delivered, the functions to be carried out at the site, and the types of customers the facility is intended to serve. Locating a site of sufficient size is critical to operating efficiencies and minimizing impacts on the surrounding community. Engineering input can establish preliminary size criteria based on a conceptual design. As noted earlier that current facility averages 186 tons per month with 680 customers per month.
- **Sufficient space for onsite roadways, queuing, and parking:** Transfer stations typically have onsite roadways to move vehicles around various parts of the transfer site. Also, the site will need space for parking transfer vehicles and to allow incoming and outgoing traffic to form lines without backing up onto public roads.

- **Ability for expansion:** When selecting a site, government entities should consider the potential for subsequent increase in the daily tonnage of waste the facility will be required to manage or added processing capabilities for recycling and diversion.
- **Space for recycling, composting, and public education:** A transfer station could be sited in areas also conducive to recycling or composting activities. Many transfer stations are designed to enable residents and businesses to drop off recyclables and yard waste in addition to trash.
- **Buffer space:** To mitigate impact on the surrounding community, a transfer station should be located in an area that provides separation from sensitive adjoining land uses such as residences. Buffers can be natural or constructed and can take many forms, including open spaces, fences, sound walls, trees, berms, and landscaping.
- **Gently sloping topography:** Transfer stations often are multilevel buildings that need to have vehicle access at several levels. Completely flat sites need ramps or bridges constructed to allow vehicle access to upper levels (or areas excavated to allow access to lower levels). Sites with moderately sloping terrain can use topography to their advantage, allowing access to the upper levels from the higher parts of the natural terrain and access to lower levels from the lower parts. Sites with steep slopes might require extra costs associated with earthmoving and retaining walls.
- **Access to utilities:** Transfer stations generally require electricity to operate equipment, such as balers and compactors; lighting; water for facility cleaning, rest- rooms, and drinking; and sanitary sewer systems for waste-water disposal.
- **Zoning Designations and Requirements:** Zoning ordinances frequently classify transfer stations as industrial uses, which limits their siting to areas zoned for industry usually in conjunction with a special use permit.

Developing Community-Specific Criteria

This criteria is a category that considers impacts the facility will have on the surrounding community. These criteria are typically less technical in nature and incorporate local, social, and cultural factors. Examples of these criteria include:

- Environmental Justice considerations (e.g., clustering, cumulative impacts).
- Impact on air quality.
- Impact on the local infrastructure.
- Adjacent land uses, including other environmental stressors that might already exist.
- Proximity to schools, churches, recreation sites, and residences.
- Prevailing winds.
- Number of residences impacted.
- Presence of natural buffers.

- Impacts on existing businesses.
- Expansion capability.
- Buffer zones and screening measures.
- Traffic compatibility.
- Impact on historic or cultural features.
- Impact on neighborhood character

Wastes Commonly Handled at Transfer Stations

The following types of waste are commonly handled at transfer stations. Specific definitions of these wastes vary locally.

Municipal solid waste (MSW) is generated by households, businesses, institutions, and industry.

Yard waste (green waste) commonly includes leaves, grass clippings, tree trimmings, and brush. Yard waste is often diverted so that it may be composted or mulched instead of going for disposal.

Household hazardous waste (HHW) includes hazardous materials generated by households, such as cleaning products; pesticides; herbicides; used automotive products such as motor oil, brake fluid, and antifreeze; and paint.

Recyclables include discarded materials that can be reprocessed for manufacture into new products. Common recyclables include paper, newsprint, ferrous metals, plastic, glass containers, aluminum cans, motor oil, and tires.

Construction and demolition (C&D) debris results from demolition or construction of buildings, roads, and other structures

Determining Transfer Station Size and Capacity

The physical size of the planned transfer station is typically determined based on the following factors:

- The amount of waste generated (186 tons / month) within the service area, including projected changes such as population growth and recycling programs.
- The types of vehicles delivering waste (such as car or pickup truck versus a specially designed waste-hauling truck used by a waste collection company).
- The types of materials to be transferred (e.g., compacted versus loose MSW, yard waste, C&D), including seasonal variations.
- Daily and hourly arrival patterns of customers delivering waste. Hourly arrivals tend to cluster in the middle of the day, with typical peaks just before and after lunchtime. Peak hourly arrivals tend to dictate a facility's design more than average daily arrivals.
- Expected increases in tonnage delivered during the life of the facility. For example, in a region with annual population growth of 3 to 4 percent, a facility anticipating a 20- year operating life would typically be designed for about twice the capacity that it uses in its first year of operation.

The same factors are used to determine the size of the following convenience center/ transfer station features:

- Amount of off-street vehicle queuing (waiting) space. At peak times, vehicles must often wait to check in at a facility's "gate- house" or "scale house." It is important that the queue (line) not block public streets or impede vehicular or pedestrian traffic.
- Number and size of unloading stalls, and corresponding number of transfer trailer loading positions.
- Short-term waste processing and storage areas (for holding waste until it can be reloaded into transfer vehicles).

Present and projected daily, weekly, and annual waste volumes (including seasonal variations) are important in planning a facility size to accommodate waste deliveries. The maximum rate at which waste is delivered is a crucial consideration as well. In general, it is best to build a facility to accommodate present and projected maximum volumes and peak flows, with a preplanned footprint for facility expansion. A useful exercise is calculating how much tipping floor space a facility would require to store a full day's waste in case of extreme emergency. One approach to estimating the required tipping floor space is to begin with a base area of 4,000 square feet and add to it 20 square feet for each ton of waste received in a day (assuming the waste will be temporarily piled 6 feet high on the tipping floor).

Future Expansion

Transfer stations are frequently designed to accommodate future expansion. Often, this is accomplished by siting the facility on a larger parcel of land than would otherwise be necessary and preplanning the site and buildings so expansion can occur without negatively affecting other functions on the site or the surrounding community.

Environmental Justice Considerations

During the site selection process, steps should be taken to ensure that siting decisions are not imposing a disproportionate burden upon low-income or minority communities. Overburdening a community with negative impact facilities can create health, environmental, and quality of living concerns. It can also have a negative economic impact by lowering property values and hindering community revitalization plans. These are just a few of the reasons environmental justice concerns should be addressed when selecting a site for any type of waste facility.

TRANSFER STATION DESIGN AND OPERATION

There are many factors that affect a transfer station design. The general design issues discussed in this section can typically be applied at a variety of facility sites and over a wide range of facility sizes.

Specific design decisions and their costs, however, can only be finalized once a specific site is selected. After determining who will use the facility and how, a site design plan can be developed. A facility's design must accommodate its customers' vehicles and the technology used to consolidate and transfer waste, provide for employee and public safety, and address environmental concerns related to safeguarding health and being a good neighbor to the surrounding community.

Transfer Station Design

The most important factors to consider when designing a transfer station are:

- Will the transfer station receive waste from the general public or limit access to collection vehicles? If access will not be limited, how will citizen traffic be separated from commercial traffic to ensure safe and efficient unloading?
- What types of waste will the transfer station accept?
- What additional functions will be carried out at the transfer station (i.e., material recovery programs, vehicle maintenance)?

- What type of transfer technology will be used?
- What volume of material will the transfer station manage?
- How much waste will the facility be designed to receive during peak flows?
- How will climate and weather affect facility operations?

Site Design Plan

Once a site is identified for the transfer station, planners, architects, and engineers use the factors described above to develop a site plan for the proposed facility. A site plan should show the layout of the transfer station site's major features, including access points, roadways, buildings, parking lots, utilities, surface- water drainage features, fences, adjacent land uses, and landscaping.

Site design plans typically show the following features:

- **Road entrances and exits.** Including acceleration/deceleration lanes on public streets, and access points for waste arriving and departing from the transfer station. Some facilities have separate access for visitors and employees, so these vehicles do not have to compete with lines of vehicles using the facility.
- **Traffic flow routes on site.** Often, separate routes are established for public use and for heavy truck use. Designers work to eliminate sharp turns, intersections, and steep ramps.
- **Queuing areas.** Queues can develop at the inbound scales, the tipping area, and the outbound scales. Queuing space should be clearly identified, and queues should not extend across intersections.
- **The scale house.** Incoming and outgoing loads are weighed, and fees are collected.
- **Primary functions at the transfer station building.** Including tipping floor, tunnels, ramps, etc.
- **Buildings.** Including entrances and exits for vehicles and people.
- **Parking areas.** Employees, visitors, and transfer vehicles.
- **Public conveniences.** Such as separate tipping areas for the general public, recycling drop-off areas, a public education center, and restrooms.
- **Space for future expansion of the main transfer building.** Often, this area is shown as a dotted line adjacent to the initial building location.
- **Buffer areas.** Open space, landscaping, trees, berms, and walls that reduce impacts on the community.
- **Holding area.** For inspecting incoming loads and holding inappropriate waste loads or materials for removal.

Main Transfer Area Design

Most activity at a transfer station occurs within the main transfer building. Here, cars and trucks unload their waste onto the floor, into a pit, or directly into a waiting transfer container or vehicle. Direct loading can simplify operations but limits the opportunity to perform waste screening or sorting.

Because the main transfer building is typically quite tall to accommodate several levels of traffic, it can often be seen easily from off- site locations. Therefore, the main transfer building should be designed to blend into or enhance the surrounding neighborhood.

Types of Vehicles That Use a Transfer Station

Traffic is frequently a transfer station's most significant community impact. Because the primary purpose of transfer stations is to provide more efficient movement of wastes, it is important to consider the following types of customers and vehicles that commonly use them.

- **Residents hauling their own wastes in cars and pickup trucks.** Residents regularly served by a waste collection service typically visit the transfer station less frequently than residents in unincorporated and rural areas not served by waste collection companies (or who elect not to subscribe to an available service). Residents typically deliver only a few pounds to a ton of waste per visit.
- **Businesses and industry hauling their own wastes in trucks.** Many small businesses such as remodeling contractors, roofers, and landscapers haul their own wastes to transfer stations. The vehicle type used, and the waste amount delivered by businesses varies considerably.

Interacting With the Public

Every transfer station has neighbors, whether they are industrial, commercial, residential, or merely vacant land. The term "neighbor" should be broadly interpreted, as some of those impacted might not be immediately adjacent to the transfer station. For example, vehicles traveling to and from a transfer station could significantly affect a residential neighborhood a mile away if those vehicles travel on residential streets.

When developing a community outreach plan, transfer station operators should consider the following:

- Develop a clear explanation of the need for the transfer station and the benefits it will provide to the immediate community and surrounding area.
- Develop a clear process for addressing community concerns that is communicated to the neighborhood even before the facility becomes operational.
- Organize periodic facility tours. Neighbors unfamiliar with the transfer station's operations are more likely to have misconceptions or misunderstand the facility's role.
- Offer support services such as newspaper drives, household hazardous waste (HHW) drop-off days, and spring-cleaning disposal at the facility.

Environmental Issues

Developing transfer stations that minimize environmental impacts involves careful planning, designing, and operation. This section focuses on neighborhood quality or public nuisance issues and offers "good neighbor practices" to improve the public's perception of the transfer station. Design and operational issues regarding traffic, noise, odors, air emissions, water quality, vectors, and litter are discussed below. Proper facility siting, design, and operation can address and mitigate these potential impacts on the surrounding natural environment and the community.

Careful attention to these issues begins with the initial planning and siting of a facility and should continue with regular monitoring after operations begin. Transfer station design must account for environmental issues regardless of surrounding land use and zoning. Stations sited in industrial, or manufacturing zones are subject to the same environmental concerns and issues as stations located in more populated zones. Minimizing the potentially negative aspects associated with these facilities requires thoughtful design choices. Identifying and addressing these important issues can be a significant part of the overall cost to develop the waste transfer station.

Traffic

Traffic causes the most significant offsite environmental impacts associated with larger waste transfer stations. This is particularly true for stations in urban and suburban areas where traffic congestion is often already a significant problem for the local community. Some of these negative impacts, however, might be concentrated in the immediate vicinity of the transfer station as a result of increased local traffic generated by a transfer station, even though overall impacts are reduced.

Any queuing should occur on the transfer station site so as not to inhibit the traffic flow on public streets.

Some specific design and operation features that might be necessary to reduce the environmental impacts of station traffic is described below:

- Designating haul routes to and from the transfer station that avoid congested areas, residential areas, and other sensitive areas.
- Adding offsite directional signs, pavement markings, and intersection signals.
- Providing acceleration and deceleration lanes that allow vehicles to enter and leave the flow of offsite traffic smoothly, reducing congestion and the likelihood of accidents.
- Using right turns to enter and leave the station site and minimizing left turns to reduce congestion and the likelihood of accidents off site.
- Providing adequate onsite queuing space so lines of customers and transfer vehicles waiting to enter the facility do not interfere with offsite traffic.

- Installing and using compaction equipment to maximize the amount of waste hauled in each transfer trailer, thus reducing the number of loads leaving the site.
- Establishing operating hours, including restrictions, that encourage facility use during nonpeak traffic times on area roads.

Noise

Transfer stations can be a significant source of noise, which might be a nuisance to neighbors' Heavy truck traffic and the operation of heavy-duty facility equipment are the primary sources of noise from a transfer station. Offsite traffic noise in the station's vicinity will be perceived as noise from the station itself. Good facility design and operations can help reduce noise emanating from the station. This includes:

- Maximizing the utility of perimeter site buffers, particularly along site boundaries with sensitive adjoining properties. Increasing the distance between the noise source and the receiver or providing natural or man-made barriers are the most effective ways of reducing noise when the sound generation level cannot be reduced.
- Orienting buildings so the site topography and the structure's walls buffer adjacent noise-sensitive properties from direct expo- sure to noise sources.
- Providing sound-absorbent materials on building walls and ceilings.
- Shutting off idling equipment and queuing trucks.
- Avoiding traffic flows adjacent to noise- sensitive property.
- Arranging the facility layout to eliminate steep uphill grades for waste-hauling trucks, as driving uphill can significantly increase noise levels.
- Facing building openings such as entrances away from noise-sensitive adjoining property.
- Considering alternatives for beeping back- up alarms, such as strobe lights and proximity detectors (if state and local regulations allow).
- Confining noisy activities within specified buildings or other enclosures. In particular, enclose hydraulic power units associated with compactors and rams in areas with acoustic silencing materials. Quieter equipment options can also be selected during design.
- Keeping as many doors closed during station operating hours as practical.
- Conducting activities that generate the loudest noise during selected hours, such as the morning or afternoon commute hours, when adjoining properties are unoccupied or when offsite background noise is at its highest.

Odors

MSW, food waste, and certain yard wastes such as grass have a high potential for odor generation. Odors might increase during warm or wet weather. Thus, transfer stations handling these wastes need to address odor management based on current and projected adjacent land uses. Odors can be managed with proper facility design and operating procedures, including:

- As with noise mitigation, increasing the distance between the odor source and the receiver effectively reduces the impact of odors.
- Evaluating the prevailing wind direction to determine building orientation and setback to adjacent properties.
- Carefully orienting the building and its doorways with respect to odor-sensitive neighboring property and closing as many doors as practical during operating hours.
- Designing floors for easy cleanup, including a concrete surface with a positive slope to drainage systems. Eliminating crevices, corners, and flat surfaces, which are hard to keep clean and where waste residue can accumulate.
- Sealing concrete and other semiporous sur- faces to prevent absorption of odor-producing residues.

REGULATORY OVERSIGHT

There are several types of regulations that generally apply to transfer stations and addresses typical regulatory compliance methods.

Applicable Regulations

Transfer stations are affected by a variety of federal, state, and local regulations, including those related to noise, traffic impact mitigation, land use, workplace safety, taxes, employee right-to-know, and equal employment opportunity that are applicable to any other business or public operation. These regulations typically emphasize the protection of public health and the environment.

Federal Regulations

No federal regulations exist that are specifically applicable to transfer stations.

State Regulations

State solid waste regulatory programs usually take primacy in transfer station permitting, although local zoning and land use requirements may apply as well.

Kentucky through the Kentucky Department of Environmental Protection has a Solid Waste Branch who regulates the process for transfer station application. https://eec.ky.gov/environmental-protection/waste/solid-waste/pages/default.aspx

Forms can be obtained from the following website: https://eec.ky.gov/environmental-protection/waste/solid-waste-branch-forms.aspx/default.aspx

Statutes can be reviewed online at KRS 224 and KAR Chapter 47 and 48.

Local Regulations

Local regulation of transfer stations can take many forms. Typical regulatory bodies include counties, cities, regional solid waste management authorities, health departments, and air pollution control authorities.

Public health departments can sometimes be involved with transfer stations because of the potential health concerns of solid waste.

SITE RECLAMATION

Once the transfer facility is closed, it is necessary to ensure that it does not become a liability to the city. Plans and remediation efforts should be initiated to explore reimagined and innovative practices to repurpose this facility as a community asset. Examples could include open-space recreational uses such as parks, wildlife areas, as well as more construction- intensive applications such as parking lots and government or commercial buildings

This document provides an overview of the common approaches to utilize closed landfills as community assets, as well as the environmental and regulatory challenges faced when implementing these projects. All uses for any closed landfills must ensure that the integrity of the final cover system is maintained to ensure protection of human health and the environment. Common challenges to the use of a closed transfer site include landfill gas and waste settlement. Landfill gas, which can be both explosive and toxic at elevated levels, must be controlled in a fashion to minimize buildup in enclosed spaces; site uses must not interfere with existing gas collection operation. As waste decomposes, the landfill settles, and this necessitates routine maintenance of any features placed on any area of the “city dump” where debris and waste was buried within the landfill surface; building construction must be undertaken with care and consideration of the long-term topographic changes.

Many opportunities exist to better utilize this site when it is closed for it to become a community resource, especially if it is discussed early in the design and planning stage of the facility. Several options/factors should be considered to enhance the use of the site after closure.

Kentucky Brownfields Program

Coordination with the State of Kentucky's brownfield program is highly recommended and could be a valuable partner in any reclamation efforts and Environmental Phase I or II assessments.

Brownfields are abandoned, unused, or underused properties where redevelopment is hindered due to known or suspected contamination. Examples of brownfields can include anything from a former industrial site to an empty building with asbestos, lead and other hazardous materials. Although brownfields are often considered problem properties, they can be redeveloped and turned into opportunities to clean up the environment, boost the local economy, and build a stronger community. Brownfield redevelopment projects also serve as a catalyst for larger revitalization efforts and support environmental justice goals for ensuring equitable development in underserved communities.

To encourage redevelopment and help finance brownfield projects, the Kentucky Brownfield Redevelopment Program provides a full spectrum of resources and services to local officials, property owners, private developers, and other stakeholders. Program staff with the Division of Compliance Assistance assist with funding, grant writing, and conducting no-cost assessment services for local governments. In addition to those services, program staff with the Division of Waste's Superfund Branch specialize in liability protections, remediation, and site management. For more information or to contact us, please see the Kentucky Brownfield Staff Referral to help identify the staff member that can be of best assistance.