Oasis Purpose and Need

The purpose of the Oasis Rail Transit project is to implement effective passenger rail transit service in the Eastern Corridor. This will:

- Provide a new, regional scale transportation alternative to driving
- Increase mobility for non-drivers
- Provide a high-capacity transit mode to support the expanded bus, bike, pedestrian, and roadway systems
- Connect downtown Cincinnati with outlying areas of population and employment
- Support neighborhood development and revitalization consistent with the land use vision plan, and
- Reduce demand for new highway capacity while providing a way to meet the future travel demand.

From Record of Decision, June 6, 2006

OASIS RAIL TRANSIT OVERVIEW (Station 1)

Tasks Completed to Date

- Completed the following studies/reports:
 - Draft Purpose and Need document
 - Riverfront Transit Center (RTC) evaluation
 - Conceptual Alternative Solutions (CAS) report
 - Station Area Planning (SAP) report
 - Multiple environmental field studies (cultural, historic, ecological)
- Developed Travel Demand Forecast Modeling Process and Assumptions
- Completed Segment 1 Alignment Coordination
- Developed Plan and Profile Sheets for Segments 1-4 (with two alternatives)
- Developed typical station and track layouts, as well as for maintenance facility
- Completed two rounds of Public Involvement meetings
- Coordinated with Railroad companies

Planning Documents Now Available

The following Oasis reports are available for public review:

- 1) Oasis Rail Conceptual Alternative Solutions Report (Station 2)
- 2) Station Area Planning (Station 3)

Copies of these reports are available on www.EasternCorridor.org

Or, scan the QR code below to download the reports now (Note: many of the files are substantial in size)



Major Tasks to be Completed in This Phase

- Refine Feasible Alternatives for the rail service (and associated tasks)
- Hold public meetings to present current information and to solicit ongoing input and comment
- Develop Preferred Alternative
- Coordinate with SORTA, Railroads, Federal Transit Administration







CONCEPTUAL ALTERNATIVES SOLUTIONS SUMMARY

(Station 2)

12/9/2013

Conceptual Alternative Solutions Report

Key Points

- Describes proposed rail transit services
- Provides ridership estimation
- Discusses corridor conditions
- Outlines recommended stations and needs
- Defines Alternately-Compliant DMU as preferred rail technology for Oasis
- Provides planning-level estimates for capital and operations/maintenance costs
- Suggests conceptual bus feeder routes
- Describes opportunities for integration with planned and proposed non-motorized transportation facilities to enhance bicycle and pedestrian access
- Reviews Oasis financing needs and provides initial discussion of available financing strategies



Oasis Rail Service: Basic Service

Basic service would offer A.M./P.M. peak hour trains in the primary direction of travel, as well as a midday roundtrip between the Riverfront Transit Center and Milford station.

	Westbound - Toward Cincinnati			Eastbound - Toward Milford		
Trainset	Depart from Milford	Arrive at Riverfront Transit Center (RTC)	Trainset	Depart from Riverfront Transit Center (RTC)	Arrive at Milford	
Morning Service			Morning Service			
1	6:00 AM	6:28 AM	1	6:40 AM	7:08 AM	
2	6:30 AM	6:58 AM				
3	7:00 AM	7:28 AM				
4	7:15 AM	7:43 AM				
1	7:30 AM	7:58 AM				
Midday Service			Midday Service			
1	11:30 AM	11:58 AM	1	12:10 PM	12:38 PM	
2	12:00 PM	12:28 PM	2	12:40 PM 1:08 PM		
Afternoon/Evening Service			Afternoon/Evening Service			
1	5:10 PM	5:38 PM	1	4:30 PM	4:58 PM	
			2	5:00 PM	5:28 PM	
			3	5:15 PM	5:43 PM	
			4	5:30 PM	5:58 PM	
			1	6:00 PM	6:28 PM	

Oasis Rail Service: Evening and Weekend

In addition to the Basic Service, evening and weekend services would address travel needs over and above the daytime commuter service.

Evening Service	
Days of Operation	Monday - Friday
Headway	1 hour
One-way travel time	28 minutes
Span of Service	6:10pm-10:30pm



Weekend Service					
Days of Operation	Saturday/Sunday				
Headway	1 hour				
One-way travel time	28 minutes				
Span of Service	11:20am-11:30pm				



Oasis Rail Service: Special Event Services

Public feedback has indicated a significant interest in a rail-based option to get to and from the many downtown sporting and cultural events. Special event services would likely overlap with basic, weekday commuter service and evening and weekend service.

Span of Service	5 hours
One-way travel time	29 minutes
Headway*	30 minutes
Special Event Service	

Baseball: This plan is based on an average of 17 home games on Saturday and sixteen home games on Sunday between March and September.**

Football: This plan is based on an average of ten home games annually consisting of pre-season and regular season games.**

Festivals: The plan is based on service provided for five annual events held on Saturdays and Sundays.**

* **Headway** is "the measurement of distance or time between rail vehicles". A 30 minute headway means a train will depart a station every 30 minutes.

** Service for other games, events and festivals would overlap with basic, weekday commuter service and evening and weekend service.



Estimated Rail-Based Travel Times

The estimated peak-period, weekday travel time from Milford to the Riverfront Transit Center by rail is approximately 27 minutes (train travel & dwell times of about 40 sec. per stop combined).

- Estimated travel time by car in 2013: 40 minutes
- Estimated travel time by car in 2040*: 90 minutes (evenings)

* As forecasted by OKI travel demand modeling

From	То	Distance (Miles)	Train Travel Time (Min)	Dwell Time (Min)	Average Speed (MPH)
Milford	Ancor	3.1	3.7	~.66	39.4
Ancor	Newtown	2.6	3.1	~.66	37.9
Newtown	Fairfax	2.6	3.1	~.66	37.9
Fairfax	Columbia-Tusculum	3.6	5.3	~.66	40
Columbia-Tusculum	Boathouse	3.6	5.3	~.66	31.4
Boathouse	RTC	1.1	3.0	n/a	20.0
Total Travel Time = 1	Frain + Dwell	16.6	23.5	3.3	34.4

Benefits of Rail

For many, there's no better way to travel than by rail. Not only is travel by rail a better value than driving, it's relaxing, safer and better for the environment.

- Predictable, reliable
- Saves money (reduces gas, parking and vehicle maintenance costs)
- Reduces vehicle emissions
- Reduces fuel consumption
- Reduces congestion
- Is safer than driving
- Strengthens communities and improves livability
- Increases property values
- Fosters economic development
- More productive time while en route (working, reading, talking, napping)



Ridership Forecasts

Proposed Service	Starting Yea	ar Ridership	2030		
	Avg. Daily Boardings	Annual Boardings	Avg. Daily Boardings	Annual Boardings	
Basic Service (MonFri., Peak/Off-Peak)	3,060	795,600	3,440	894,400	
Evening Service (Monday-Friday)	180	46,800	210	54,600	
Weekend Service (Saturday + Sunday)	740	38,480	830	43,160	
Special Event Service (Varying days)	n/a	31,000		36,000	

Notes on Ridership Forecasts:

- Based on OKI Travel Demand Model
- Does not consider potential new/increased development that could be attributed to the rail service/stations, which could increase ridership over these conservative forecasts.

Ridership Comparisons

System	Major Cities Served	Route Miles	Average Weekday Ridership per Route Mile	Ridership (Average Weekday)	Number of Stations	Year Opened	Farebox Recovery (in %)
Caltrain	San Francisco/San Jose	77	537.7	41,000	32	1987	47.0
A-Train	Denton County,, TX	21	409.5	8,600	6	2011	n/a
Trinity Railway Express	Dallas, Ft. Worth, TX	34	241.2	8,200	10	1996	37.6
Virginia Railway Express	Washington, D.C.	90	213.3	19,200	18	1992	57.3
Oasis	Cincinnati, OH	17	190.6	3,240	7	TBD	n/a
Tri-Rail	Miami, FL	72	184.7	13,300	18	1987	20.5
NICTD South Shore Line	Chicago, IL	90	134.4	12,100	20	1903	44.9
UTA FrontRunner	Salt Lake City, UT	44	131.8	5,800	8	2008	10.5
Sounder Commuter Rail	Seattle/Tacoma, WA	80	126.3	10,100	9	2000	22.0
NCTD Coaster	San Diego, CA	41	122.0	5,000	8	1995	40.0
Westside Express Service	Beaverton, OR	15	106.7	1,600	5	2010	5.0
Capital MetroRail	Austin, TX	32	87.5	2,800	9	2010	0.5
Northstar Line	Minneapolis, MN	40	50.0	2,000	6	2009	15.8
New Mexico Rail Runner	Albuquerque, NM	97	40.2	3,900	13	2006	12.7
Shore Line East	New Haven, CT	59	37.3	2,200	13	1990	8.2
Altamont Commuter Express	San Jose, CA	86	34.9	3,000	10	1998	34.0
Music City Stor	Nashville TN	32	31.3	1.000	6	2006	14.0

Oasis Segments 3 and 4

Oasis Segment 3 Fairfax to Ancor

Oasis Segment 4 Ancor to Milford

At this time, several issues need to be addressed before Oasis Segments 3 & 4 can advance in planning and development:



- Rail alignment alternatives for Segment 3 will be developed as part of the proposed SR 32 Relocation project. This project is still under study and final alignment alternatives have not yet been developed.
- Norfolk Southern (NS) owns and operates the existing rail tracks in Oasis Segment 3. The planning team is currently coordinating with NS about sharing the rail tracks and right-of-way.
- A potential new rail connection to the Eastgate residential, businesses and retail hub is currently under consideration.

Oasis Segments 1 and 2

Oasis Segment 1 Riverfront Transit Center (RTC) to Boathouse

Oasis Segment 2 Boathouse to Fairfax/Red Bank

To provide for an earlier introduction of Oasis Rail Service, it is possible to begin initial operations between the Riverfront Transit Center (RTC) and Fairfax/Red Bank station.







Oasis Rail Technology: DMU

Modern, low-emission Diesel Multiple Unit (DMU) rail vehicles have been identified as the best option for Oasis Rail Transit. These vehicles:

- Are quiet, low-emission, neighborhood friendly
- Are comfortable, sleek, attractive
- Self-propelled and efficient
- Can travel on existing tracks
- Have low floor access to ease boarding
- Don't require overhead electric lines or electrified tracks





DMUs Are in Service Throughout North America



San Antonio, TX



Oceanside – Escondido, CA



Denton County, TX

















Rail Traffic Controller Modeling

Rail modeling software has been applied to identify where double tracks are required. Providing single track for most of the corridor will reduce project construction costs.



RTC Modeling Results

As the volume of trains rises over time, additional track capacity will be required, resulting in new sections of double track – particularly in Segment 2, which would eventually be double tracked between Boathouse and Columbia-Tusculum Stations.



Rail Vehicle Maintenance Facility

Potential Features:

- Vehicle Maintenance Area
- Administration / Operations Center
- Train Washer
- Refueling Area
- Storage and Maintenance Track
- Security and Train Control Center
- Location to be determined either near Lunken Airport (temporary) or at Ancor (permanent)



This facility could be located on either a temporary or permanent basis (depending on its location), and would be designed to be adaptable – with sufficient storage capacity to be expanded in future to store and maintain additional vehicles to serve increased demand and/or other rail corridors.

Estimated Capital Cost for Oasis Start-Up System

	Category	Cost Estimate* (avg of low to high)
	Frackwork	\$45,000,000
2	Stations & Maintenance Facility	\$23,400,000
	Rail Vehicles	\$20,600,000
2	Soft Costs & Contingency	\$24,300,000
	TOTAL	\$113,300,000

- A Start Up system would operate within Segments 1-2 between the Riverfront Transit Center (RTC) and the Fairfax/Red Bank Station – with a temporary maintenance facility near Lunken Airport.
- Preliminary cost estimates for the full Segments 1-4 system RTC to Milford range between \$230M and \$323M
- Cost estimates shown above present an average cost for an initial, minimal start-up system and are based upon current year (2013) average unit costs.
- Estimate does not include Freight RR Negotiated Costs, Right of Way Acquisition Costs, Environmental Mitigation or Utility Costs. Estimate may be higher or lower depending on final alignments and design details.

Conceptual Rail Bus Feeder Services

New bus feeder shuttle routes would facilitate access to the Oasis rail service from multiple points along the corridor.



- Compact routes would provide quick travel times and easy connections between the rail corridor and regional activity centers
- Feeder services would match frequency and service hours to maximize ridership and convenience

Consideration will also be given to adjusting existing bus routes to provide better connections to the Oasis Rail Transit service and eliminate duplicative services. Development of these feeder services will be conducted in partnership with SORTA and other transit agencies.

Considerations for Bicycles and Pedestrians

To incorporate non-motorized (pedestrian and bicycle) modes where possible in the Oasis Rail corridor, planners must consider:

- The width of the available rail right-of-way (ROW), particularly in Segment 2
- Preservation of adequate space within the ROW to accommodate current and future operational, maintenance and security needs
- Where the rail corridor width is not sufficient or privately owned, any bike/ped facilities would need to be located outside the ROW
- Should rail service use the existing bridge over the Little Miami River, any bike/ped facilities would need to utilize a separate crossing
- Needs and requirements of freight RRs, and Federal, State and Local Agencies



Quiet Zones Reduce Rail-Related Noise

Oasis At-Grade Crossings Could be Designed for Quiet Zones

- Quiet Zones provide enhanced supplemental safety measures, such as:
 - 4-Quadrant Crossing Gates (at selected crossings)
 - Raised, extended medians to prevent cars from going around crossing gates when lowered
 - Pedestrian gates
 - Additional signage
 - Wayside horns
- Within a Quiet Zone, engineers are not be required to sound their horns (engineer retains the ultimate discretion to use horn in an emergency)



OASIS RAIL TRANSIT STATION AREA PLANNING (Station 3)

The Role of Station Area Planning



Station Area Planning (SAP) is the process of planning and designing the community space around transit stations. SAP facilitates opportunities for community enhancement, growth and development by:

- Re-balancing community and mobility needs
- Expanding mobility choices
- Putting land use goals first, then adding transit
- Recognizing the potential for changing regional development patterns

What is Transit-Oriented Development?

Located within easy walking distance of quality public transit stations, TODs are compact, mixed-use community spaces that integrate housing, office, retail, entertainment and/or other amenities into walkable neighborhoods. TODs:

- Reinforce traditional neighborhoods
- Revitalize by-passed properties and can increase their value
- Redefine development patterns by focusing growth along corridors served by transit
- Expands mobility choices beyond travel by automobile and supports bicycling and walking





Desired Features of TOD



The areas around the seven proposed Oasis station locations have been assessed for their ability to create and encourage:

- Defined centers around which the community can continue to grow and thrive
- Compact, walkable areas supporting a diverse mix of uses, including residential, retail and commercial
- Civic and/or public spaces for increased interaction
- Areas for pedestrian and bicycle use
- A connected neighborhood street and sidewalk network
- Opportunities for increased transit ridership

Oasis Station Types: District & Community-Serving

District Type : Fairfax/Red Bank and Ancor Stations

- Connected to highways, major roads, main bus routes
- Provides bus/rail transfer
- Includes Park & Ride but has bike up/walk up potential as well
- Allows for High/Moderate density mixed-use development
- Offers Special Event access



Community Type: All Other Stations

- Have fewer bus transfer options, may be served by feeder routes
- Has higher bike up/walk up potential
- Offers limited parking
- Allows for Moderate density mixed-use development
- Offers Special Event access



Station Planning Workshops

Station Planning Workshops will engage neighborhood stakeholders and others in determining how best the Oasis Rail Stations can be integrated into the communities they will serve.

Workshop Topics

- Stations Access
- Orientation
- Desired amenities (which will be common to all Oasis stations)
- Elements to establish a more-unique local character and identity at each location



Participate in Oasis Planning Online

The Eastern Corridor Planning Team is using an online public engagement program to capture public input on service schedule refinement, and community desires for station design elements. Available <u>here</u> tonight, and at <u>www.EasternCorridor.org/cincinnati-oasis-survey</u> this interactive feedback tool is accessible via any internet-enabled computer, tablet or smartphone.



Information gained through this tool will form the baseline concepts for the development of Greater Cincinnati's long-planned regional rail network, of which Oasis is the first piece.