U.S. Department of Transportation
Federal Highway Administration

CENTER FOR INNOVATIVE FINANCE SUPPORT

Case Study: RENO'S I-80 AIR RIGHTS PROJECT

In the 1970s, the Nevada Department of Transportation (DOT) entered into an above-grade right-of-way use agreement, called an "air rights agreement," with a private developer for a 15-story hotel-casino above I-80 in Reno. But after the developer built a concrete-and-steel cap deck over I-80, financing for the rest of the project fell through, and the developer backed out of the hotel-casino project. The lease was transferred from private party to private party for 26 years until a retail store chain secured a sublease to build a store on the deck above I-80. The chain rehabilitated the deck and built the store in four years without shutting down the highway below. This use shows the kind of planning and community process needed to make use of a long-vacant structure after a development is canceled.

Summary Overview

Project name	I-80 Air Rights Project
Location	Reno, Nevada
Built environment	Urban downtown
Type of infrastructure	Highway deck cap above I-80
Value capture instrument	Right-of-way use agreement for air rights
Summary of funding plan	Lease of air rights and deck over I-80 for a Walgreens pharmacy and grocery
Amount of value capture	$2.3 million over lease period
Duration of value capture	75 years
Value capture innovation	Repurposing by Walgreen Co. of a deck over I-80 that had remained vacant for 20 years.
Notable outcomes	The project provided grocery services for downtown and the University of Nevada Reno campus. Few externalities or equity issues.
Statutory or regulatory changes	State legislation to allow for private company signage on airspace above highways.

Key Takeaways

- **Air rights enable development and revenue.** Air rights projects can generate revenue by using the space above or below infrastructure. Potential developments require coordination from multiple agencies, and in the case of highways, approval from FHWA.
- **New markets and opportunities.** Air rights projects do not make financial sense in areas with developable parcels and low rents. For the I-80 Walgreens, the air rights project made financial sense because the I-80 deck was already built and just needed rehabilitation, and there was market and community support for the pharmacy-grocery.
- **Public-private partnerships.** Air rights create opportunities for public and private partnerships and mutually beneficial development agreements through which transit and highway agencies can generate revenue. In this case, the benefits were:
  - Much-needed pharmacy, retail, and grocery services for residents of downtown Reno and the University of Nevada Reno campus
  - Rehabilitation and repurposing of a previous project that was never completed. If this Walgreens project had not worked out, the deck over I-80 may not have been used and would have eventually required removal.
- **Development risks should be taken seriously and may delay projects for decades.** After the deck was completed, the lender for the project backed out, and the deck remained vacant and undeveloped until the retailer approached Nevada DOT and the planning process began.

Introduction to Air Rights

Air rights are a type of right-of-way use agreement concerning the property rights at, above, or below a horizontal plane, where developers can build to sell, own, or lease space. Initially, air rights were used by railroads to generate revenue or profit from the space above tracks and other infrastructure. The first air rights project was New York Central Terminal, which was completed in 1913. Other early air rights projects were also on top of railways in dense, urban Manhattan, Chicago, and Philadelphia.[1] Air rights often involve the space over public property that is used for private uses, including hotels, retail, offices, parking, and housing. There are also examples of public air rights being sold or leased for public use. Air rights over infrastructure can generate revenue through the purchase or leasing of the air rights.

Air rights can be part of joint-development projects when public investment in a transportation facility or structure creates an opportunity for equitable use, such as a hospital or affordable housing; or for profitable use, such as commercial, office, or market rate housing. The distinction between joint development and air rights projects is that joint development projects can be on land adjacent to infrastructure or on other municipal or state-owned property, whereas air rights projects are specifically above or below infrastructure such as highways,

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[1] American Society of Planning Officials, "Information Report No. 186: Air Rights" 1964

railways, or transit stations. Air rights extend along the vertical plane of property boundaries and can be transferred, sold, or taxed, depending on local laws and zoning. Air rights agreements allow for the purchase or lease of airspace above, below, or adjacent to transportation infrastructure rights-of-way or properties.[2]

Air rights projects require more engineering and design than non–air rights projects and have higher life-cycle costs, including for construction and maintenance, but air rights projects can reduce costs if infrastructure is planned and designed to allow for future air rights uses rather than being retrofitted after the infrastructure is built.[3]

Air rights projects are more common in urban or dense areas with higher rents, sufficient market demand for space, lower vacancy rates, and land values that can justify the higher cost of development above or below other infrastructure.

Project Overview

Nevada DOT and the City of Reno entered into a public-private partnership with Walgreen Co. for the retailer to rehabilitate a deck above I-80 and develop a grocery store and pharmacy there.

The deck above the freeway was constructed in 1973 for a hotel-casino development that had leased the air rights from Nevada DOT. The casino use for the air rights location was considered suitable given the potential for high revenue generation by a hotel-casino. But after the deck was completed, the lender for the project backed out, and the hotel-casino was not built. Between the mid-1970s and late-1990s the lease changed hands several times, but the deck remained unoccupied, and the structure slowly decayed. If not used and maintained, the deck would have to be demolished. The cost of the deck removal, according to the air rights lease, was the responsibility of the leaseholder.

The deck remained vacant until the late 1990s, when Walgreen Co. approached Nevada DOT about building a grocery store and pharmacy on the deck over I-80. The City of Reno and Nevada DOT were initially skeptical of the proposal because of the lower revenue-generating potential of a retail development compared to that of a hotel-casino. But with a lack of interest from other large developers, a lack of grocery or drugstore in the area (near the University of Nevada Reno), and the need for the deck to be demolished if not put to good use, however, the authorities reconsidered.[4] Construction of the Walgreens began in 1999 and ended in 2002, when the pharmacy opened. Project cost was $4 million.

Until then, Nevada law prohibited advertising on or near highways and bridges, which would have prevented the company from putting a sign with its name on the store. Walgreen Co.

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[2] FHWA Center for Innovative Finance, “Right-of-Way Use Agreements Fact Sheet,” https://www.fhwa.dot.gov/ipd/fact_sheets/value_cap_row_use_agreements.aspx

[3] Daniel, Mann, Johnson, and Mendenhall, “Valuation of Air Space,” NCHRP Report 142, pp. 47-48

[4] Karl Breckenridge, “The Walgreens atop the I-80 freeway” Reno Gazette Journal

lobbied for an amendment to the law to allow an exemption for air rights leases, and as the development neared completion, a law was passed to allow the building to have signs.[5]

The building design had to be innovative to meet the engineering limits on weight and to incorporate neighborhood and stakeholder input (Figure 1). The design was approved by the City Council and Planning Commission, and the building won an award for outstanding achievement in structural civil engineering from the American Society of Civil Engineers.

Figure 1. The Walgreens on top of I-80 in Reno

Photo Credit: Reno Gazette Journal

The revenue from the lease of the air rights is $31,000 per year, equaling $2.3 million for Nevada DOT over the 75-year lease period. The lease has an option to renew in 2065.

Leasing of Transportation Infrastructure Air Rights in Nevada

Nevada DOT granted the initial air rights lease in 1971. If this or a similar project were proposed in Nevada now, it would require additional approvals from the local planning department—City of Reno Community Development in this case—and FHWA because of regulatory changes concerning right-of-way, air rights, and zoning.[6]

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[5] NRS Chapter 405 Control and Preservation of Public Highways, Billboards, Signs, and Advertising, https://www.leg.state.nv.us/nrs/NRS-405.html#NRS405Sec020

[6] CFR Title 23, Chapter I, Subchapter H, Part 710. Electronic Code of Federal Regulations (e-CFR). https://www.ecfr.gov/cgi-bin/text-idx?SID=9ab38b263f1cf4c85bb1cd3c6a3690eb&node=pt23.1.710&rgn=div5

Nevada statute allows for the private sale and transfer of air rights leases, but the sale or transfer must be approved by Nevada DOT. Air rights can be leased from Nevada DOT to other departments, governments, or private parties, and according to Nevada Revised Statutes (NRS), 408-507(2) and (4), can be leased, rented, or sold at fair market value. If a proposal is submitted to Nevada DOT for an air lease, a notice must be published for 60 days to allow other proposals to be received by Nevada DOT, and the property must be leased to the highest bidder.[7] Lease revenue must be collected and deposited with the Nevada State Treasurer for credit to the State Highway Fund.[8]

In the 50 years since the I-80s air rights project was initiated, policies and requirements for right-of-way agreements have changed, including how projects are approved, valued, and maintained. The most recent Nevada DOT Right of Way Manual[9] provides the state's current airspace use requirements, including the following:

- Airspace on the Interstate system must be reviewed and approved by FHWA.
- Proposed airspace leases must be published in a newspaper for 60 days before final selection of prospective lease to allow for a competitive bidding process.
- The Nevada DOT Board of Directors must approve final selection of lessee.
- Leases are allowed on conditions and terms that Nevada DOT determines are in the best interest of the State, and with the approval of the city, county, or regional planning commission to ensure that the proposed use is in accordance with foreseeable future local planning and zoning.
- Lease terms are limited to 5 to 20 years (compared with the 75-year term of the Walgreen Co. lease), with revaluations at 5-year intervals.
- Nevada DOT determines the value of air rights leases based on the Nevada DOT assessor's unit valuation of the adjacent land and a current rate of return based on Nevada DOT–approved methodology or Nevada DOT's Multi-Use Lease Determination Form.[10]
- A facility's physical condition must be inspected annually to certify that lease uses conform to lease provisions and to identify non-conforming features. If the facility is found to be non-compliant, a Nevada DOT right-of-way agent is assigned to resolve the compliance issue with the lessee.

Planning for Air Rights Development and Easements

Air rights projects have unique structures and therefore require more frequent inspection and additional maintenance to preserve the structure and maintain safety for the transportation infrastructure below or above the development. Operations and maintenance costs are higher than those for a non–air rights project. Air rights agreements should factor in the additional cost

[7] Title 23, Chapter I, Subchapter H, Part 710
[8] NRS Chapter 408 – Highways, Roads, and Transportation Facilities, Section 507 Lease of rental of Property. https://www.leg.state.nv.us/nrs/nrs-408.html#NRS408Sec507
[9] NDOT "Right of Way (ROW) Manual 2016." https://www.dot.nv.gov/home/showdocument?id=4492
[10] If the air rights will generate an annual lease less than $1,000 it is deemed nominal and a nominal lease is established.

and frequency of inspections, as well as anticipated maintenance and repair schedules for the structures to protect the integrity of the transportation infrastructure and the public agency that owns the infrastructure. Agreements should define the parties that have financial responsibility for the inspections, maintenance, and repairs or how those costs are split between the lessee and the lessor. Considerations of air rights and value capture are discussed below.

Legal and Zoning

The following legal and regulatory steps are necessary before air rights can be agreed to:

- Review state highway and other transportation infrastructure laws and regulations allowing for air rights projects above or below transportation infrastructure.
- Ensure laws and regulations allow for signage on air rights transportation development on transportation facilities.
- Consider how non-compliance by the lessee with the terms of the agreement will be addressed. In Nevada, if non-compliance cannot be resolved by the Nevada DOT Right of Way Agent and lessee, the matter is referred to the Nevada Attorney General's Office for negotiation.

Financial

The following financial steps are necessary before air rights can be agreed to:

- Perform a real estate market analysis of rents, land values, vacancy rates, and projections of future demand.
- Perform an analysis of additional operations, inspections, and maintenance costs required, and assign each cost clearly to the lessor or the lessee.

Risk

The Reno I-80 case shows that developments can become dormant for long periods, so developers and agencies providing leases or easements must consider the need for high up-front engineering, design, and construction costs. Lease rates must consider the higher costs of development and maintenance and require appropriate returns.

Other lessons learned about the risks of this kind of development were:

- Requiring that operations of the roadway or other infrastructure while the air rights development is being built will add time and costs to the development.
- To avoid speculative development, consider flexible designs allowing alternative uses and require market studies to verify the demand for space and comparable rents.

Coordination

Cooperation between highway agency and local redevelopment (planning and zoning) agencies are important to approve the various aspects of an air rights development. Where local redevelopment agencies focus on traditional zoning and planning requirements for all developments, such as: heights, setbacks, floor to area (FAR) ratios, building use types, and other major zoning requirements for a development to receive final permitting. While Nevada

DOT focuses on the approvals for airspace, leases, plans for construction (e.g., to not disrupt roadway or other infrastructure), signage, and other key components of the project.

Active marketing and coordination with developers, potential lessees, and local agencies, such as transit, or municipal planning and zoning, can create new opportunities for new airspace leases and additional revenue.

Planning

During planning and design of new or rehabilitated transportation infrastructure, consider sites for potential air rights development. If sites are suitable for air rights development and the agency wishes to pursue this type of development and value capture, perform engineering and construction analysis.

Use real estate analysis to establish lease rates for air rights and easements. Ensure rates exceed total cost to the agency leasing the air rights and other easements. Rents should also be able to generate net positive revenue.

How to Evaluate the Value of Air Rights

To determine an air rights development's financial feasibility, a jurisdiction should consider:

- **Developer costs**: Air rights projects may include a deck or subterranean construction, which must support non-transportation structure, additional sound insulation, additional construction safety and access costs based on the transportation infrastructure, and specialized architecture and engineering.
- **Project income:** Income streams mostly follow a basic pro forma similar to those for most projects, except with higher development, safety, and inspection costs.
- **Lease payments** must demonstrate a return on investment for the lessor given higher cost of investment and must generate revenue for reinvestment in transportation.

For the developer or lessee considering an air rights development or location, market factors are a significant consideration that must justify the development costs. Air rights projects will not make financial sense in areas with developable parcels and low rents. For the I-80 Walgreens, the project made financial sense because the I-80 deck was already constructed and just needed rehabilitation and there was market and community support for the retail pharmacy and grocer. The nearby University of Nevada Reno campus and dormitories provides a large downtown population within walking distance. Until this point the campus was not served well by downtown grocery and pharmacy locations. [11]

Air rights projects must at least:

- Follow the local planning and zoning approval process, which may include assembling of parcels, public outreach, and various levels of planning and design review

[11] Karl Breckenridge, "The Walgreens atop the I-80 freeway" *Reno Gazette Journal*

- Obtain permission for easements and right-of-way approvals from the state DOT.
- Obtain FHWA approval, per 23 CFR 713B Management of Airspace, when an air rights project involves property acquired with federal funds or when the design or construction of transportation infrastructure used federal funds or is part of the Interstate system.

Financial arrangements to capture airspace value can be made through:[12]

- Lease payment, either one time, up front or over the short or long term
- Direct sale of land and development rights to a private developer that provides an easement back to the agency
- Sale of the development rig4hts to a private developer.

Implications for Future Applications of Value Capture

Air rights can generate long-term income for State DOTs and local agencies, but large developments are inherently risky and require secure funding. Air rights projects are more complicated than regular developments, require additional permitting, and need sufficient market rents to cover the higher up-front development costs. If the real estate market can support higher rents, an air rights development can generate long-term revenue for an agency or DOT, but risk must be managed and mitigated.

Up-front planning. If air rights value capture projects are a possibility, they should be considered during the planning and design of the infrastructure. Retrofitting or building on top of an existing infrastructure is more costly if these uses are not factored into the original design.

Maintenance. The maintenance of a platform or subterranean infrastructure supporting an air rights building can be challenging. Those costs and responsibilities must be spelled out in the lease. If the full cost of inspections and maintenance is considered, the lease may not generate sufficient revenue to be feasible.

Opportunities. Because permitting, financing, and market risk can affect an air rights project's viability, alternative opportunities should be considered. The Walgreens development is a successful alternative use case for a site that was originally intended for a hotel-casino.

Economic development. Given the technical requirements of air rights projects, they are rarely considered as transportation financing mechanisms. An air rights project, if structured properly, can pay for itself and enhance economic development in the surrounding area. While air rights developments have a better chance of success in urban areas, Nevada DOT has been approached by developers about opportunities in rural areas where highways bisect critical parcels or industrial sites. In these cases, an air rights project could make substantial improvements to the transportation infrastructure and bolster economic output for the region.

[12] NCHRP, "Using the Economic Value Created by Transportation to Fund Transportation, NCHRP synthesis 459," Transportation Research Board: Washington, D.C., 2014, p. 24.

Lessons Learned from Reno's I-80 Air Rights Project

Since the I-80 deck was built and the original hotel-casino development was canceled, several regulatory and legal changes have been made as lessons were learned about mitigating risk and formalizing the process of leasing air rights. These are discussed next.

Regulations

Highway airspace is more regulated now than in the early 1970s. Nevada statute, Nevada DOT's Right-of-way Manual, and municipal planning and zoning now address air rights, and any airspace agreement over a highway now requires FHWA approval. Regulations mitigate risk (such as the possibility of a stalled development) by establishing a more robust review process, including financial and legal, for potential air rights developments.

- **Competitive bids for air rights projects.** Nevada DOT now requires proposed air leases to be advertised in a newspaper for 60 days before it selects a lessee.
- **Signage for airspace is now allowed.** Signage enables marketable space. The NRS now allows for signage above Nevada highways on airspace developments.
- **Airspace leases are for shorter terms.** New leases are for 5 to 20 years and are reviewed at 5-year intervals, allowing for changes in lease rates to be more in line with changing market conditions and costs associated with maintaining leases.

Financial

Air rights projects do not generally make financial sense in areas with developable parcels and low rents, but certain use cases can make air rights projects feasible. To do so, total costs throughout the term of an air rights lease must be considered.

For Walgreen Co., the project made financial sense because the I-80 deck was already constructed and there was market and community support for the retail pharmacy and grocer. What is more, the original deck and bridge design and placement provided good access from the highway and from city streets.

Air rights projects create extra administrative and staff costs during project development, permitting, and approval, for legal reviews and negotiations. In addition, there are long-term administrative costs for Nevada DOT throughout the lease, including inspections, handling sale or transfer of leases, and coordination between air rights lessee and sublessor for repairs. When structuring lease agreements, these costs must be considered; otherwise, administrative costs may exceed lease revenue. It is not clear if the air rights lease for the Walgreens creates sufficient revenue for the transportation fund after staff costs and inflation are considered.

After the development of the original hotel-casino stalled, other proposals were reviewed, and eventually Walgreens use of the deck above I-80 was approved. The use of the long-dormant deck is a positive outcome for Nevada DOT and Reno. Nevada DOT continues to be contacted by developers and explores new development proposals for other potential air rights sites.

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